RESPONSIBLE LAND DISTURBER DESIGNATION THE PERSON IDENTIFIED BELOW IS DESIGNATED AS THE RESPONSIBLE LAND DISTURBER WHO WILL BE IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND DISTURBING ACTIVITY ASSOCIATED WITH THIS PROJECT. THE PERSON MEETS THE APPLICABLE REQUIREMENTS OF VIRGINIA CODE SECTION 10.1-563 AND 10.1-566 BY VIRTUE OF THE FOLLOWING: RESPONSIBLE LAND DISTURBER CERTIFICATE GINIA PROFESSIONAL ENGINEER LAND SURVEYOR LANDSCAPE ARCHITECT OR ARCHITEC RESPONSIBLE LAND DISTURBER CONTACT INFORMATION NAME (PRINT): CERTIFICATION/REGISTRATION NUMBER COMPANY: MAILING ADDRESS: THIS DESIGNATION MAY ONLY BE CHANGED BY A PLAN COVER SHEET REVISION THAT MUST BE SUBMITTED TO THE CITY FOR VERIFICATION AND APPROVA

THE DEPARTMENT OF PUBLIC WORKS/ENGINEERING MUST BE CONTACTED AT LEAST 48 HOURS PRIOR TO MEETING. PLEASE CALL (757) 664-4600

THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL PROPERT OR ON PUBLIC RIGHT-OF-WAY NECESSITATES NOTICE WHETHER ADJACENT TO OF LOCATED ON THE ADJOINING PROPERTY. FAILURE TO PROVIDE THE MINIMUM NOTIFICATION TIME WILL RESULT IN A SUSPENSION OF WORK

ADJACENT PROPERTY OWNERS NOTE

UTILITY AND GOVERNING AGENCIES CONTACT LIST

CITY OF NORFOLK UTILITIES DOMINION VIRGINIA POWER P.O. BOX 1080 1601 HAMILTON AVE. NORFOLK, VIRGINIA 23501 PORTSMOUTH, VA 23707 CONTACT: DAVID SPEER, P.E. PHONE:(757) 393-3824 (WORK) TEL: (757) 664-6701 FAX: (757) 664-6739

NATURAL GAS COMPANY

VIRGINIA NATURAL GAS

NORFOLK, VA 23502

TEL: (757) 466-5525

FAX: (757) 466-5514

5100 E.VIRGINIA BEACH BLVD.

CONTACT: JOSEPH SIMONS

LOCAL ENGINEERING OFFICE

PHONE:(757) 434-3703 (CELL) CONTACT: GAYLENE W. WATSON FAX: (757) 664-6707

VERIZON 5701 CLEVELAND ST. VIRGINIA BEACH, VA 23462 TEL: (757) 875-2541 **CONTACT: CARLTON HENERY**

CITY OF NORFOLK PUBLIC WORKS 810 UNION ST. NORFOLK, VIRGINIA 23510 TEL: (757) 664-4602 FAX: (757) 664-4603

COX COMMUNICATIONS 5200 CLEVELAND STREET VIRGINIA BEACH, VA 23462 (757) 435-5245 CONTACT: DEMETRIUS IDLETT

CITY OF NORFOLK TRANSPORTATION DIVISION

810 UNION ST. ROOM 200

> NORFOLK, VIRGINIA 23510 TEL: (757) 664-7304 FAX: (757) 664-7311

CITY OF NORFOLK UTILITIES

CONTACT: DAVID SPEER, P.E

HAMPTON ROADS TRANSIT

509 EAST 18th STREET, BLDG 4

DIRECTOR OF CONSTRUCTION

NORFOLK SMART TRAFFIC CENTER

NORFOLK, VIRGINIA 23501

P.O. BOX 1080

TEL: (757) 664-6701

NORFOLK, VA 23504

CONTACT: DON LINT

(757) 222-6000 EXT. 6018

NOTES:

- THE CONTRACTOR SHALL CONTACT THE CITY OF NORFOLK, BUREAU OF ENVIRONMENTAL SERVICES (664-4368) AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBANCE ACTIVITY TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE.
- THIS PROPERTY IS LOCATED WITHIN A CITY OF NORFOLK CBPA DESIGNATED INTENSELY DEVELOPED AREA (IDA)

LAND DISTURBANCE

THERE IS APPROXIMATELY 2.43 AC. OF LAND DISTURBANCE FOR

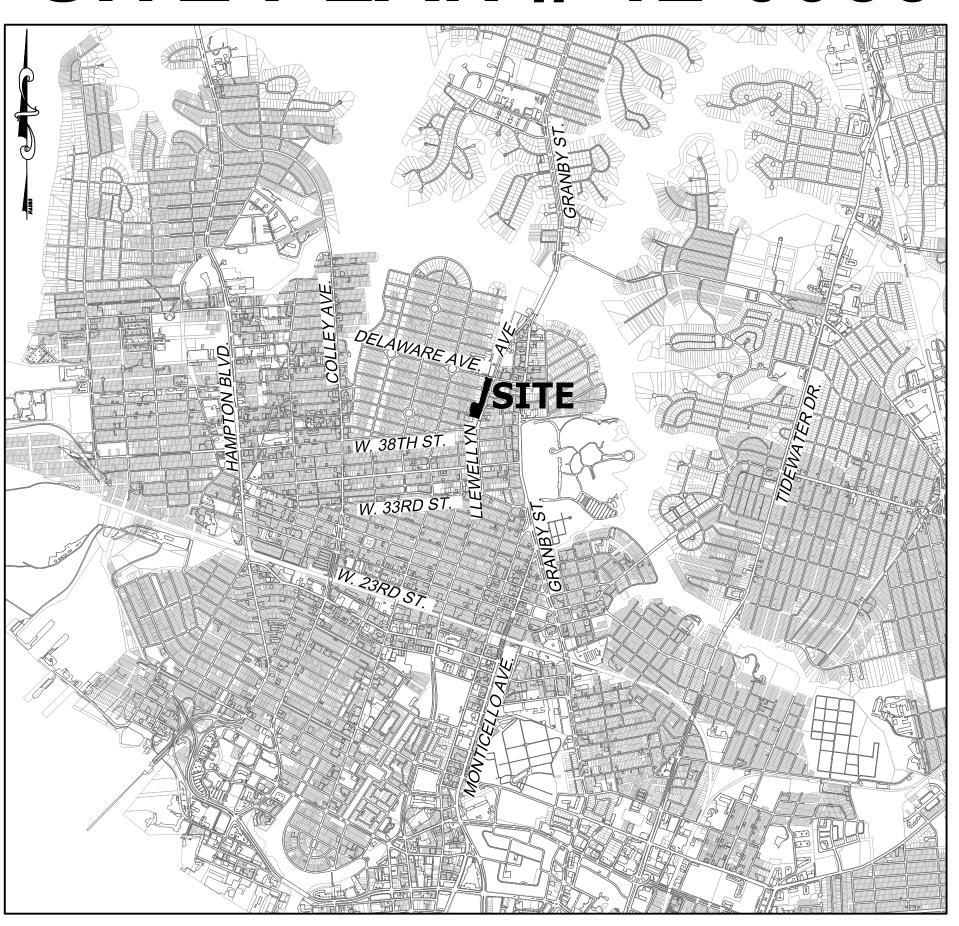
SITE WILL NEED VSMP CONSTRUCTION PERMIT PRIOR TO LAND DISTURBANCE. CONTACT THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION AT (804) 225-2613 TO OBTAIN A VSMP CONSTRUCTION PERMIT

SURVEY NOTES:

- S-1. THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET.
- S-2. ELEVATIONS SHOWN HEREON ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "CN073" ELEV=8.79
- S-3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND MAY NOT SHOW ANY/ALL LOT LINES, EASEMENTS, RESTRICTIONS AND CURRENT RIGHTS-OF-WAY WHICH MIGHT AFFECT THE PROJECT AREA SHOWN HEREON.
- S-4. WETLANDS AND WATERS OF THE U.S. WERE DELINEATED BY TIMMONS GROUP AND CONFIRMED BY THE U.S. ARMY CORPS OF ENGINEERS IN A LETTER DATED NOVEMBER 7, 2011 (NAO 2011-02303). TEMPORARY WETLAND IMPACTS ASSOCIATED WITH THIS PROJECT HAVE BEEN AUTHORIZED BY THE U.S. ARMY CORPS OF ENGINEERS UNDER THE TERMS AND CONDITIONS OF NATIONWIDE PERMIT 27 IN A LETTER DATED SEPTEMBER 28, 2012 (NAO
- S-5. THE UNDERGROUND UTILITIES SHOWN ARE BASED ON A COMBINATION OF EXISTING MARKINGS, FIELD LOCATED STRUCTURES AND PLAN INFORMATION AVAILABLE. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THIS SURVEY DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THEIR EXACT LOCATION INDICATED. HOWEVER, THEY HAVE BEEN LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ALL UNDERGROUND UTILITIES ARE TO BE FIELD VERIFIED BY OTHERS PRIOR TO CONSTRUCTION. MISS UTILITY TICKETS UTILIZED: B009600639, B007601917 &
- S-6. RIGHTS-OF-WAY AND LOT LINES SHOWN HEREON WERE COMPILED FROM AVAILABLE PLATS OF RECORD AND SURVEY DRAWINGS OBTAINED FROM THE CITY OF NORFOLK, DIVISION OF SURVEYS. CITY OF NORFOLK, DIVISION OF SURVEYS DRAWINGS UTILIZED: #3521, #3522, #3523 & #3524.
- S-7. AERIAL MAPPING BY MCKENZIE SNYDER, INC., DATED 03/04/10, WAS UTILIZED IN THE PREPARATION OF THIS SURVEY.

CIVIL CONSTRUCTION PLANS GREENWAY STORWWATER PARK

NORFOLK, VIRGINIA JUNE 5, 2013 SITE PLAN # 12-0053



VICINITY MAP SCALE: 1" = 2,000

SHEET INDEX:

C-001 - COVER SHEET C-002 - GENERAL NOTES C-101 - OVERALL PLAN C-201 - EXISTING CONDITIONS

C-301 - DEMOLITION & EROSION CONTROL PLAN

C-401 - GRADING PLAN AND PROFILE C-402 - GRADING PLAN AND PROFILE

C-501 - SITE PLAN

C-601 - EROSION CONTROL NOTES C-602 - EROSION CONTROL DETAILS

C-603 - EROSION CONTROL & GENERAL DETAILS

C-701 - HYDROLOGY AND HYDRAULICS PLAN

L-101 - LANDSCAPE PLAN

L-102 - LANDSCAPE NOTES AND DETAILS

ENGINEER / LANDSCAPE

ARCHITECT:

TIMMONS GROUP 208 GOLDEN OAK COURT SUITE 230 VIRGINIA BEACH, VIRGINIA 23452

PHONE: (757) 213-6662 (757) 340-1415

CONTACT: LIZ SCHEESSELE, PE, CFM

SURVEYOR:

BLAKEWAY CORPORATION 770 INDEPENDENCE CIRCLE SUITE 100 VIRGINIA BEACH, VIRGINIA 23455

PHONE: (757) 226-0081 (757) 226-8765

CONTACT: CHARLES L. SMITH III, L.S.

OWNER:

CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS STORMWATER DIVISION 2233 McKANN AVENUE NORFOLK, VIRGINIA 23509 PHONE: (757) 823-4000 FAX: (757) 441 2402 CONTACT: MR. REY HERNANDEZ. P.E.

SIGNATURE BLOCK FOR CITY USE

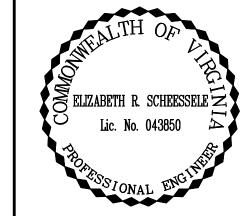
DATE

DIRECTOR OF PLANNING

"MISS UTILITY" OF VIRGINIA **DIAL - 811** FOR LOCATION OF UNDERGROUND UTILITIES

PRIOR TO CONSTRUCTION,

CONTRACTOR SHALL CALL



6/5/2013 L. MARSH

DESIGNED BY S. KRIEBEI CHECKED BY

SCHEESSEL

NO SCALE

SHEET NO.

GENERAL

- ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH
 THESE DRAWINGS, PROJECT SPECIFICATIONS, AND WITH ALL CURRENT
 APPLICABLE CODES AND THE LATEST REVISIONS OF THE FOLLOWING
 REFERENCE DOCUMENTS:
- (A) VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS
- (B) VDOT ROAD AND BRIDGE STANDARDS
- (C) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

(D) VIRGINIA WORK AREA PROTECTION MANUAL

- (E) VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH)

 (F) CITY OF NORFOLK CONSTRUCTION SPECIFICATIONS AND STANDARDS
- 2. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE CURRENT SPECIFICATIONS AND STANDARDS OF THE CITY OF NORFOLK, VA. DEPARTMENT OF PUBLIC UTILITIES CONSTRUCTION STANDARDS ARE SET FORTH IN THEIR CONSTRUCTION SPECIFICATIONS AND STANDARDS FOR WATER AND SANITARY SEWERAGE FACILITIES (HRPDC 5TH EDITION), AND THE CURRENT DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS AND STANDARDS. A COPY OF WHICH MUST BE PURCHASED FROM DPU BY THE CONTRACTOR AND KEPT AT THE JOB SITE AT ALL TIMES. REFERENCE TO VDOT SHALL MEAN THE CURRENT STANDARDS AND/OR SPECIFICATIONS OF VDOT.
- 3. ALL CONCRETE TO BE MINIMUM CLASS A-3 AIR ENTRAINED (3000 P.S.I.)
- 4. CONTRACTOR SHALL MAKE ANY NECESSARY ADJUSTMENTS TO ALL UTILITY SPLICE BOXES, JUNCTION BOXES, METER BOXES, ELECTRICAL SPLICE BOXES, MANHOLES, CLEANOUTS, AND OTHER ITEMS IN SIDEWALK TO MATCH FINISHED SIDEWALK GRADE.
- 5. WHERE PROPOSED ENTRANCES AND CURB AND GUTTER TIE INTO EXISTING, ELEVATIONS AND ALIGNMENTS SHALL BE MATCHED.
- 6. FOR WORK IN THE CITY OF NORFOLK RIGHT-OF-WAY, CONTACT THE FOLLOWING 48 HOURS IN ADVANCE:

RIGHT OF WAY DIVISION: 664-7306

DRAINAGE: 823-4000

LANDSCAPING: 441-2435

DEPARTMENT OF UTILITIES: 823-1000 (5 DAYS IN ADVANCE)

- 7. THE CONTRACTOR SHALL, AT ALL TIMES, COMPLY WITH ALL OSHA AND STATE SAFETY ORDERS
- 8. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS AND LICENSES AND KEEP COPIES OF THE SAME ON SITE DURING CONSTRUCTION.
- 9. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS. ANY DISCREPANCIES FOUND SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND BE RESOLVED BEFORE PROCEEDING WITH ANY WORK
- 10. ALL INFORMATION SHOWN ON THESE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. THE CONTRACTOR SHALL REPORT IMMEDIATELY TO THE ENGINEER ANY CONDITIONS CONFLICTING WITH THE DRAWINGS. FIELD MODIFICATIONS TO THE DRAWINGS SHALL NOT BE MADE WITHOUT THE CONSENT OF THE ENGINEER AND OWNER.
- 11. THE CONTRACTOR SHALL KEEP AND MAINTAIN A SET OF PROJECT PLANS, SPECIFICATIONS, AND SWPPP BINDER ON THE SITE AT ALL TIMES.
- 12. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES.
- 13. DIMENSIONS TAKE PRECEDENCE OVER SCALE.
- 14. ALL SALVAGEABLE ITEMS REMOVED AND NOT USED REMAIN THE PROPERTY OF THE OWNER.
- 15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, DRIVEWAY, WALKS, CURBS, TRAFFIC SIGNAL DEVICES, PAVEMENT MARKINGS, ETC. THAT MAY BE CUT, OR THAT ARE DAMAGED DURING CONSTRUCTION AT HIS OWN EXPENSE.
- 16. ALL RIM ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY AND SHALL BE ADJUSTED TO MATCH THE FINISHED GRADE.
- 17. DRIVEWAY APRON IS TO BE NORFOLK STANDARD HS-25 OR HS-31, 6"
 THICK FOR RESIDENTIAL OR 8" THICK FOR COMMERCIAL. MAINTAIN
 EXISTING ELEVATION AT STREET/EDGE OF SIDEWALK, REMOVE SIDEWALK
 AND FORM TO UNIFORM THICKNESS. REMOVE CURB TO BASE. POUR TO
 BE INTEGRAL WITH APRON. ALL CONCRETE TO BE SAW CUT.
- 18. CITY OF NORFOLK FLOOD CERTIFICATION: THE PROPERTY SHOWN HEREON APPEARS TO FALL WITHIN FLOOD ZONE "AE" ACCORDING TO F.E.M.A.'S FLOOD INSURANCE RATE MAP (F.I.R.M.) FOR THE CITY OF NORFOLK, VIRGINIA. MAP NUMBER 5101040090F, MAP REVISED: SEPTEMBER 2, 2009
- 19. THE CONSTRUCTION SITE, ADJACENT AREAS, AND RIGHTS-OF-WAY SHALL BE KEPT CLEAN AND CLEAR OF CONSTRUCTION DEBRIS AT ALL TIMES.
- 20. FLOWABLE FILL IS NOT AN APPROVED MATERIAL FOR USE IN THE CITY OF NORFOLK FOR BACKFILL WITHOUT PRIOR APPROVAL. THE SELECT MATERIAL AND 21A STONE WILL BE IN ACCORDANCE WITH THE 2007 VDOT ROAD AND BRIDGE SPECIFICATIONS. FOR BACKFILL AROUND THE PIPE USE SELECT MATERIAL (SECTION 207) TYPE I AND 20 CBR COMPACTION. FOR THE SUB BASE MATERIAL USE 6" MIN. VDOT 21A STONE IN ACCORDANCE TO SECTION 208.
- 21. DETAILED STAMPED DRAWINGS FOR ANY SHORING AND SCAFFOLDING WILL BE REQUIRED AS PART OF THE RIGHT-OF-WAY PERMIT PROCESS.
- 22. RIGHT-OF-WAY EXCAVATION PERMITS ARE REQUIRED TO PERFORM EXCAVATION WORK, SEWER AND WATER MAIN INSTALLATION, AND ALL APPURTENANCES. PLEASE CONTACT THE DIVISION OF RIGHT-OF-WAY AT 664-7306 OR AT WWW.NORFOLK.GOV/PUBLICWORKS/ROW.
- 23. THE CONTRACTOR WILL BE REQUIRED TO POST A CASH, CHECK, OR SURETY BOND LETTER OF CREDIT TO EXCAVATE IN THE RIGHT-OF-WAY.
- 24. WHEN THE CONTRACTOR'S WORK REQUIRES THE SAWCUTTING AND/OR PARTIAL DEMOLITION AND/OR REMOVAL OF ANY SECTION OF AN EXISTING APRON OR SIDEWALK. THE CONTRACTOR WILL BE REQUIRED TO REMOVE SAID EXISTING APRON OR SIDEWALK AND REPLACE IT WITH A NEW MONOLITHIC APRON OR SIDEWALK. SIDEWALK SHALL BE REMOVED TO THE NEAREST JOINT. ALL CONCRETE IS TO BE SAW CUT. NO PATCHING WILL BE ALLOWED. COMMERCIAL APRONS SHALL BE REPLACED WITH AN APPROVED COMMERCIAL APRON. RESIDENTIAL APRONS SHALL BE REPLACED WITH AN APPROVED RESIDENTIAL APRON (HS-207). SIDEWALKS SHALL BE REPLACED WITH AN APPROVED SIDEWALK DETAIL.

- CONTACT THE DIVISION OF RIGHT-OF-WAY FOR APPROVAL 664-7306. (ORDINANCE NO: 40,778)
- 25. FULL CURB TO CURB RESURFACING MAY BE REQUIRED IF ROADWAY PORTION IS CUT WITHIN THE FIRST 5 YEARS AFTER RESURFACING.
- 26. WHEN A NEW APRON AND/OR SIDEWALK IS INSTALLED, ALL NEW OR EXISTING UTILITY STRUCTURES SHALL BE INSTALLED AND/OR RELOCATED OUTSIDE THE AREA OF THE NEW APRON AND/OR SIDEWALK. A PERMIT AND INSPECTION ARE REQUIRED.
- 27. AS PART OF THE CONTRACTOR'S PERMIT APPLICATION TO WORK IN THE RIGHT OF WAY, THE CONTRACTOR MUST SUBMIT A MAP IDENTIFYING THE PROJECT STORAGE AND LAY DOWN AREA. THE CITY DOES NOT ALLOW STORAGE, STAGING OR LAY DOWN AREAS WITHIN THE RIGHT OF WAY. CONTRACTORS ARE ENCOURAGED TO MAKE ARRANGEMENTS TO STORE MATERIALS AND LAY DOWN ON PRIVATE PROPERTY OR THEY MUST BE STORED WITHIN THE CONSTRUCTION SITE.
- 28. ALL TEMPORARY BULK WASTE CONTAINERS PLACED IN THE RIGHT OF WAY REQUIRE A PERMIT FROM THE DIVISION OF RIGHT OF WAY (664-7306).
- 29. ANY EXCAVATION IN THE ROADWAY WITH A TEMPORARY STONE(21A) RESTORATION WILL BE REQUIRED TO HAVE BASE COURSE ASPHALT IN PLACE WITHIN 30 DAYS.
- 30. ALL MISS UTILITY MARKINGS IN THE RIGHT-OF-WAY ARE REQUIRED TO BE ERADICATED AT THE COMPLETION OF THE PROJECT.
- 31. DURING CONSTRUCTION "CUT AND HAUL" METHODOLOGY FOR ALL EXCESS CUT MATERIAL SHALL BE USED IN LIEU OF STOCKPILE. IN THE EVENT THAT STOCKPILING IS NECESSARY, THE CONTRACTOR SHALL CONTACT NORFOLK PUBLIC WORKS AT (757) 664-4614 TO DETERMINE A SUITABLE LOCATION AND SECURE THE STOCKPILE AREA WITH A DOUBLE ROW OF SILT FENCE.

MAINTENANCE OF TRAFFIC

- 1. PRIOR TO THE SCHEDULING OF A PRE-CONSTRUCTION CONFERENCE, THE CONTRACTOR SHALL SUBMIT A PRELIMINARY TRAFFIC CONTROL PLAN FOR REVIEW BY THE DIVISION OF TRAFFIC ENGINEERING, DEPARTMENT OF PUBLIC WORKS. THE TRAFFIC CONTROL PLAN AS WELL AS ALL TRAFFIC CONTROL DEVICES UTILIZED ON THE PROJECT MUST COMPLY WITH THE "FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND "THE VIRGINIA WORK AREA PROTECTION MANUAL" FOLLOWING APPROVAL OF THE PLAN, A REPRODUCIBLE DRAWING SHALL BE SUBMITTED TO THE OFFICE OF THE DIRECTOR OF UTILITIES FOR USE AND DISTRIBUTION.
- 2. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DETAILED MAINTENANCE OF TRAFFIC CONTROL PLAN (MOT) WITH THE CONTRACTOR'S PERMIT APPLICATION TO WORK IN THE RIGHT-OF-WAY. THE MOT SHALL BE A DRAWING OR AERIAL PHOTO WITH SITE SPECIFIC DETAILS. THESE SHALL INCLUDE BUT ARE NOT LIMITED TO: TRAFFIC SIGNS, DIRECTIONAL SIGNS, DESTINATION SIGNAGE, CHANNELIZING DEVICES, WATER-FILLED BARRIERS, PORTABLE MESSAGE BOARDS WITI MESSAGES TO BE DISPLAYED AND TIMES AND DURATIONS OF DISPLAYED MESSAGES. ADDITIONALLY, THE MOT SHALL DISPLAY THE EXACT LOCATION OF ALL SIGNS AND/OR DEVICES INCLUDING SPACING FOR EACH SIGN AND/OR DEVICE, SPACING BEING APPROPRIATE FOR THE WORK ZONE LOCATION AND POSTED SPEED LIMITS. ALL MOT PLANS SHALL CONFORM TO THE CURRENT ISSUE OF "THE VIRGINIA WORK AREA PROTECTION MANUAL." COPIES OR REPRODUCTIONS OF THE MOT THAT ARE INCLUDED WITH THE PROJECT DRAWINGS AND SPECIFICATIONS WILL NOT BE ACCEPTED WITH THE CONTRACTOR'S PERMIT APPLICATION. CONTRACTORS SHOULD CONSIDER THESE ITEMS WHEN BIDDING PROJECT FOR CONSTRUCTION.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ZONE SIGNING, DELINEATION PAVEMENT MARKINGS AND ANY OTHER TRAFFIC CONTROL DEVICES NECESSARY TO PERFORM THE WORK. UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL SUCH TEMPORARY DEVICE.
- 4. NO LANE CLOSURES AND/OR WORK IN THE RIGHT OF WAY, INCLUDING GRADING, SIDEWALK, CURB AND GUTTER, AND DRIVEWAY APRON INSTALLATION WILL BE ALLOWED WITHOUT A PERMIT FROM THE DIVISION OF RIGHT OF WAY (664-7306). ALL TRAFFIC CONTROL SHALL COMPLY WITH THE CURRENT EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)", THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE "CITY OF NORFOLK RIGHT OF WAY EXCAVATION AND RESTORATION MANUAL. ADDITIONAL CHARGES APPLY IF OFF-DUTY OFFICERS ARE REQUIRED. A LIST OF PERMIT FEES IS LOCATED AT WWW.NORFOLK.GOV/PUBLICWORKS/ROW.
- 5. CONTRACTOR SHALL NOT CLOSE TRAFFIC LANES WITHOUT A PERMIT FROM THE RIGHT OF WAY DIVISION (664-7306).
- 6. TRAFFIC CONTROL PLANS AND DETAILS ARE REQUIRED FOR ALL CONSTRUCTION IN THE RIGHT-OF-WAY. WORK IN THE CITY RIGHT-OF-WAY IS PERMITTED ONLY BETWEEN THE HOURS OF 9:00AM AND 3:00PM OR AS DETERMINED BY THE CITY RIGHT OF WAY ADMINISTRATOR
- 7. EMERGENCY VEHICLE ACCESS SHALL BE MAINTAINED AT ALL TIMES WITHOUT EXCEPTION.

DEMOLITION

- 1. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL THE REMOVED/DEMOLISHED MATERIAL FROM THE PROJECT SITE AND DISPOSAL OF THE SAME IN A LEGAL MANNER AND/OR DELIVERY TO THE CITY THOSE ITEMS SO DESIGNATED.
- 2. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND TEMPORARY RELOCATION OF EXISTING SIGNS.
- 3. ALL VEGETATION, WOODY, OR OTHERWISE, EXCEPT LAWN, ORNAMENTAL GRASS AND FLOWERS LESS THAN TWENTY-FOUR (24) INCHES IN HEIGHT WITHIN THE 100' CBPA BUFFER REQUIRES A PERMIT FOR REMOVAL, ALTERATION, OR WORK WITHIN THE CRITICAL ROOT ZONE FROM BUREAU OF ENVIRONMENTAL SERVICES (664-4751) WITH SUBSEQUENT MITIGATION REQUIREMENTS.

UTILITIES

- 1. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF LOCATING ANY AND ALL UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST OR CROSS THROUGH THE AREA OF CONSTRUCTION WHETHER OR NOT THEY ARE SHOWN ON THESE PLANS BEFORE DIGGING. TO AVOID THE UTILITIES, THE CONTRACTOR SHALL CALL "MISS UTILITY OF VIRGINIA" AT "811". THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS SOLE EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- 2. THIS PLAN DOES NOT GUARANTEE THE EXISTENCE, NON-EXISTENCE, SIZE, TYPE, LOCATION, ALIGNMENT OR DEPTH OF ANY OR ALL UNDERGROUND UTILITIES OR OTHER FACILITIES. WHERE SURFACE FEATURES (MANHOLES, CATCH BASINS, VALVES, ETC.) ARE UNAVAILABLE OR INCONCLUSIVE. INFORMATION SHOWN MAY BE FROM UTILITY OWNER'S RECORDS AND/OR ELECTRONIC LINE TRACING, THE RELIABILITY OF WHICH IS UNCERTAIN.
- THE CONTRACTOR SHALL PERFORM WHATEVER TEST EXCAVATION OR OTHER INVESTIGATION IS NECESSARY TO VERIFY TIE-IN INVERTS, LOCATIONS AND CLEARANCES, AND SHALL REPORT IMMEDIATELY ANY DISCREPANCIES TO TIMMONS GROUP AT (804) 200-6500. UTILITY COMPANIES SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ANY EXCAVATION IN THE PROXIMITY OF THEIR UTILITIES.
- 3. CONTRACTOR SHALL CONFORM TO THE "OVERHEAD HIGH VOLTAGE LINE SAFETY ACT" (EFFECTIVE JULY 1, 1989) AND SHALL CONTACT THE NECESSARY AUTHORITIES PRIOR TO START OF CONSTRUCTION.
- 4. STATE LAW MANDATES THE NOTIFICATION OF UTILITY OWNERS 48 HOURS IN ADVANCE OF EXCAVATION. FOR LOCATION OF UTILITIES CALL:

UTILITY OWNER CONTACTPHONE NUMBERDOMINION VIRGINIA POWER (GAYLENE W. WATSON)(757) 393-3824VERIZON COMMUNICATIONS (CARLTON HENERY)(757) 875-2541COX COMMUNICATIONS (DEMETRIUS IDLETT)(757) 435-5245VIRGINIA NATURAL GAS (JOSEPH SIMONS)(757) 466-5525HAMPTON ROADS SANITATION DISTRICT(757) 460-2261CITY OF NORFOLK DEPT. OF UTILITIES (DAVID SPEER)(757) 664-6724

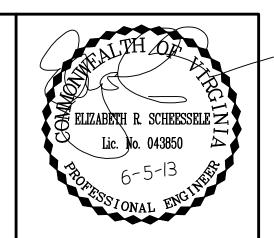
- 5. PROPOSED CITY RIGHT-OF-WAY AND CITY UTILITY EASEMENT WATER AND SEWER WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF NORFOLK MODIFICATIONS TO HRPDC REGIONAL STANDARDS 5TH EDITION, THE HAMPTON ROADS PLANNING DISTRICT COMMISSION REGIONAL STANDARDS, AND THE LATEST EDITION OF THE VIRGINIA DEPARTMENT OF HEALTH REGULATIONS.
- 6. THE UTILITIES FIELD ENGINEERING OFFICE SHALL BE CONTACTED AT 823-1001 FIVE (5) DAYS PRIOR TO START OF WORK TO SCHEDULE AN INSPECTOR AND PRE-CONSTRUCTION CONFERENCE. APPROVED SUBMITTALS REQUIRED ON ALL INSPECTED MATERIALS.
- 7. WATER METER SETTINGS AND FIRE SERVICE DETECTOR CHECK INSTALLATIONS SHALL BE PERFORMED BY CITY FORCES AT THE CITY'S EXPENSE.
- 8. WATER SERVICE ABANDONMENT SHALL BE PERFORMED BY CITY FORCES. CALL UTILITIES WATER DISTRIBUTIONS AT 823-1001 TO COORDINATE.
- 9. THE CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS OF THE "CITY OF NORFOLK TREE ORDINANCE" (EFFECTIVE JANUARY 15, 1996) AND NORFOLK'S ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE MANUAL.
- 10. CONTACT CITY FORESTER (757) 823-4024 TO INSPECT TREES SCHEDULED FOR DEMOLITION OR PRUNING WITHIN THE RIGHT-OF-WAY OR OTHER PUBLIC PROPERTY AND TO GET A PERMIT FOR WORK. ANY EXCAVATIONS THAT OCCUR WITHIN THE ABOVE-MENTIONED TREE PROTECTION AREAS INTENDED TO BE PRESERVED WILL NEED TO HAVE ROOT PRUNING DONE AT 1' 0" TO THE INSIDE EDGE OF THE PROPOSED EXCAVATION.
- 11. ALL PLANTING, PRUNING AND REMOVAL PERMITS FOR WORK ON PUBLIC TREES IN PUBLIC PROJECTS MAY HAVE VARIOUS SPECIFIC REQUIREMENTS, INCLUDING BUT NOT LIMITED TO, REQUIRING PROFESSIONAL ISA CERTIFIED ARBORISTS PERFORM URBAN FORESTRY WORK.
- 12. PROPOSED FIRE HYDRANT PIPING TO BE 6" DUCTILE IRON PIPE CLASS 52 MINIMUM WITH MECHANICAL RESTRAINED JOINTS AND FIRE HYDRANT VALVES RODDED TO SERVICE TEES. FIRE HYDRANT VALVES LOCATED NO GREATER THAT 3 LINEAR FEET FROM SERVICE TEES.
- 13. LOCATION AND DEPTH OF ALL PUBLIC UTILITIES SHALL BE FIELD VERIFIED BY CONTRACTOR WITH A NORFOLK DEPARTMENT OF UTILITIES INSPECTOR PRESENT. CONTRACTOR SHALL CONTACT THE UTILITIES FIELD ENGINEERS OFFICE, (TEL: 823-1001) AT LEAST 72 HOURS PRIOR TO EXCAVATION TO ARRANGE FOR A NORFOLK DEPARTMENT OF UTILITIES INSPECTOR TO BE PRESENT.
- 14. ALL HYDRANTS MANUFACTURED WITHIN 10 YEARS OF THE DATE OF THE NOTICE TO PROCEED, SHALL BE CAREFULLY REMOVED IN ORDER TO INSURE THE INTACT AND UNDAMAGED REMOVAL OF THE ENTIRE FIRE HYDRANT AND BARREL ASSEMBLY, SAFELY STORED, TRANSPORTED AND DELIVERED TO THE COMBINED OPERATIONS FACILITY LOCATED AT 1316 BALLENTINE BOULEVARD. (POINT OF CONTACT IS TOBY McLAWHORN / WATER DISTRIBUTION DIVISION AT TELEPHONE; 823-1008.) THE CONTRACTOR SHALL REPLACE FIRE HYDRANTS THAT ARE TO BE DELIVERED TO THE CITY THAT ARE DAMAGED OR LOST DURING REMOVAL AND / OR TRANSPORT, WITH A NEW FIRE HYDRANT AT NO ADDITIONAL COST TO THE CITY.
- 15. STAKEOUTS FOR PROPOSED WATER AND SEWER LINES SHALL BE PERFORMED BY A VIRGINIA LICENSED SURVEYOR. WRITTEN CUT SHEETS SHALL BE PROVIDED TO THE UTILITIES FIELD ENGINEER OFFICE FIVE (5) DAYS PRIOR TO COMMENCEMENT OF UTILITY WORK.

CONSTRUCTION

- SUBMITTALS ON MATERIALS FOR THIS PROJECT SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION.
- 2. ALL CLEARING, GRUBBING AND GRADING SHALL BE PERFORMED IN ACCORDANCE WITH VDOT SPECIFICATIONS AND STANDARDS.
- 3. THE CONTRACTOR SHALL STRIP TOPSOIL AND ANY ORGANIC LADEN SOIL AND STORE FOR USE IN BACKFILLING, IF DEEMED ACCEPTABLE BY OWNER'S REPRESENTATIVE, AND LANDSCAPING FOR SITE RESTORATION. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY EXCESS SOIL AFTER RESTORATION OF THE SITE, OR AS DIRECTED BY THE OWNER.
- 4. ALL UTILITIES TO BE INSTALLED UNDER THIS PROJECT ARE SHOWN ON THESE PLANS SCHEMATICALLY IN THEIR APPROXIMATE LOCATIONS. THESE UTILITIES INCLUDE: ELECTRIC, WATER, SEWER AND FIBER OPTIC COMMUNICATION. HOWEVER, ADDITIONAL UTILITIES IN THE AREA CONSIST OF WATER, SEWER AND TELEPHONE WHICH MAY REQUIRE ADJUSTMENTS IF EXPOSED DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE THE FINAL LOCATIONS OF THESE UTILITIES IN THE FIELD WITH UTILITY COMPANIES.
- ALL UNPAVED SURFACES SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AWAY FROM PAVED AREAS AND TOWARD DRAINAGE STRUCTURES.
- 6. THE CONTRACTOR SHALL PROVIDE AND PAY FOR ALL CONSTRUCTION SURVEYING REQUIRED.
- 7. ALL PAVEMENT MARKINGS AND STRIPING SHALL BE THE COLOR AND PATTERN AS NOTED ON THE PLANS. PAINT SHALL CONFORM TO VDOT SPECIFICATIONS SIZE AND SHAPES SHALL CONFORM TO THE MUTCD.
- 8. SAW CUTTING OF EXISTING CONCRETE AND ASPHALT PAVING SHALL COMPLY WITH OSHA. THE CONTRACTOR SHALL KEEP DUST TO A MINIMUM AND SHALL BE RESPONSIBLE FOR THE DAMAGE TO AND REPLACEMENT OF ADJACENT MATERIALS AND FINISHES.
- 9. ALL STORM WATER PIPE JOINTS TO BE WRAPPED WITH A NON WOVEN FILTER CLOTH.
- 10. AT THE OWNERS DISCRETION EXCESS CLEAN EARTH FILL MATERIAL CONTAINING NO VEGETABLE MATTER, BROKEN CONCRETE OR OTHER DEBRIS MAY BE DISPOSED OF ON THE OWNER'S PROPERTY AT A LOCATION DESIGNATED BY THE OWNER OR AS DESIGNATED ON THE DRAWINGS IN A MANNER APPROVED BY THE OWNER.

DRAINAGE

- 1. THE LOCATIONS OF ALL DRAINAGE STRUCTURES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THE DIMENSIONS SHOWN ON THE PLANS FOR DROP INLETS AND JUNCTION BOXES ARE APPROXIMATE.
- 2. ALL STORM SEWER PIPES, MANHOLES, AND CURB INLETS SHALL BE CLEANED OF DEBRIS AND ERODED MATERIALS AT THE LAST STAGES OF CONSTRUCTION.
- 3. ALL STORM DRAINAGE SYSTEM MEASURES SHALL BE COMPLETED AS SOON AS FEASIBLE IN THE CONSTRUCTION SCHEDULE.
- 4. TEMPORARY DRAINAGE DURING CONSTRUCTION SHALL BE PROVIDED BY THE CONTRACTOR TO RELIEVE AND PREVENT FLOODING IN AREAS THAT MAY CAUSE DAMAGE TO ROADWAYS.
- PRECAST STRUCTURES SHALL BE BUILT AND ASSEMBLED IN ACCORDANCE WITH V.D.O.T. STD. 103.01 AND .02 AND NORFOLK APPLICABLE STANDARDS.
- 6. ALL NEW DRAINAGE STRUCTURES ARE TO HAVE VDOT STD. IS-1 INLET SHAPING.
- 7. ALL STORM SEWER PIPE IN CITY OF NORFOLK RIGHT OF WAY SHALL BE CLASS III REINFORCED CONCRETE. FOR STRENGTH, SHEET THICKNESS, OR CLASS DESIGNATION; AVAILABLE SIZES; HEIGHT OF FILL LIMITATIONS; AND METHOD OF BEDDING REQUIRED FOR A PARTICULAR HEIGHT OF COVER, SEE THE APPLICABLE VDOT ROAD AND BRIDGE STANDARDS PC-1 AND PB-1.
- 8. ALL GROUND WATER REMOVED AS A RESULT OF DEWATERING ACTIVITIES DURING CONSTRUCTION SHALL BE FILTERED WITH A FILTRATION DEVICE PRIOR TO DISCHARGE INTO A STORMWATER CONVEYANCE SYSTEM.



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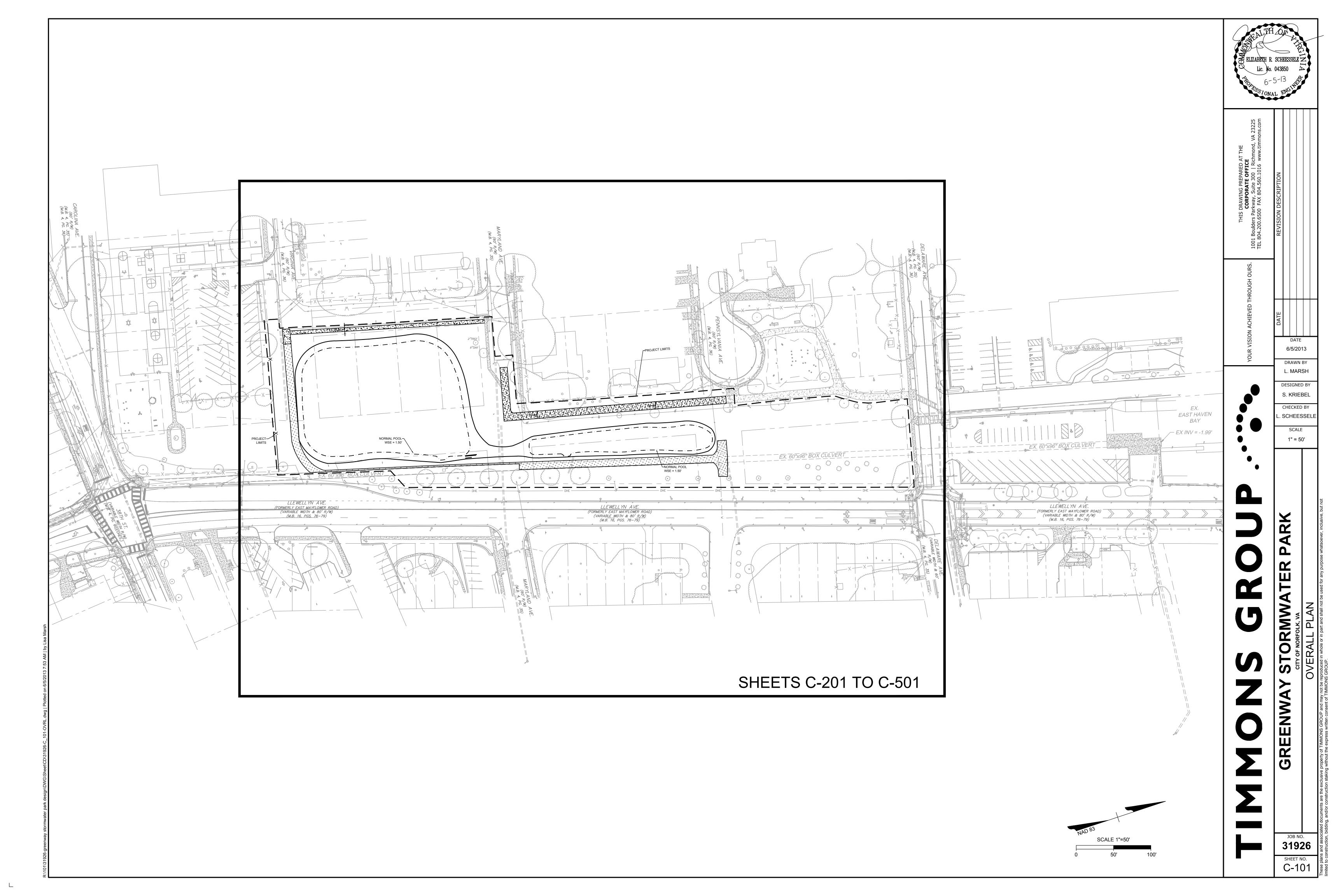
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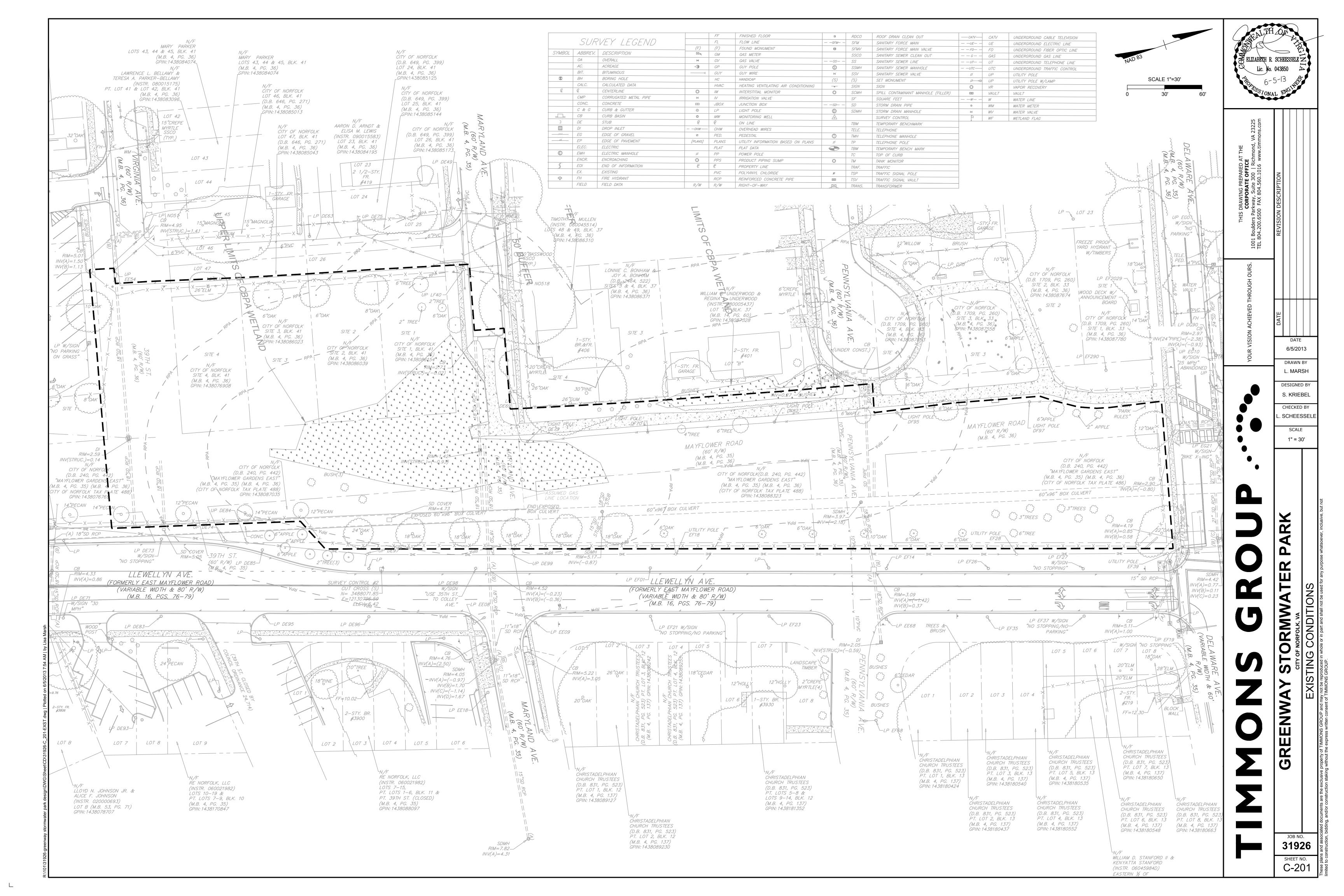
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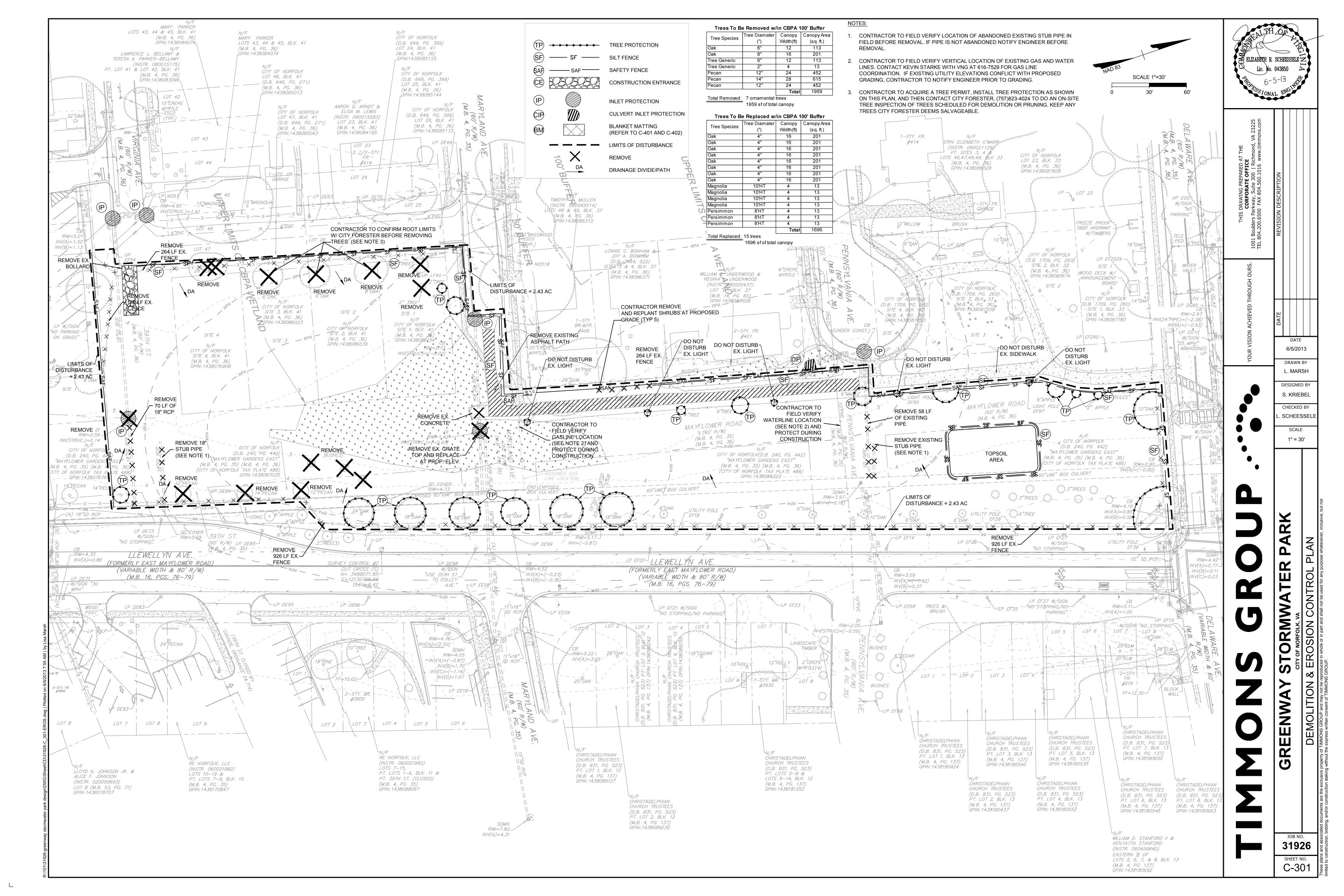
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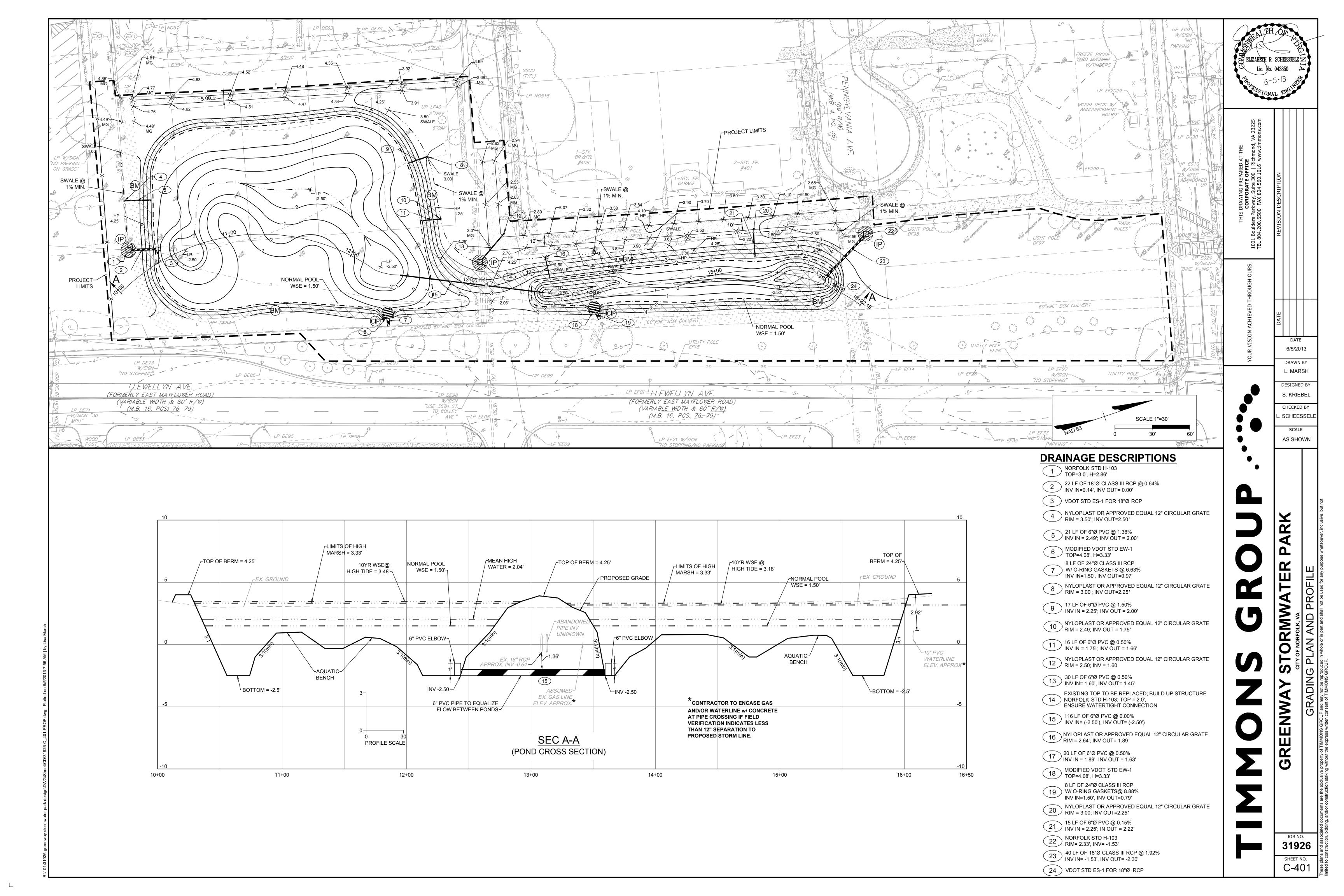
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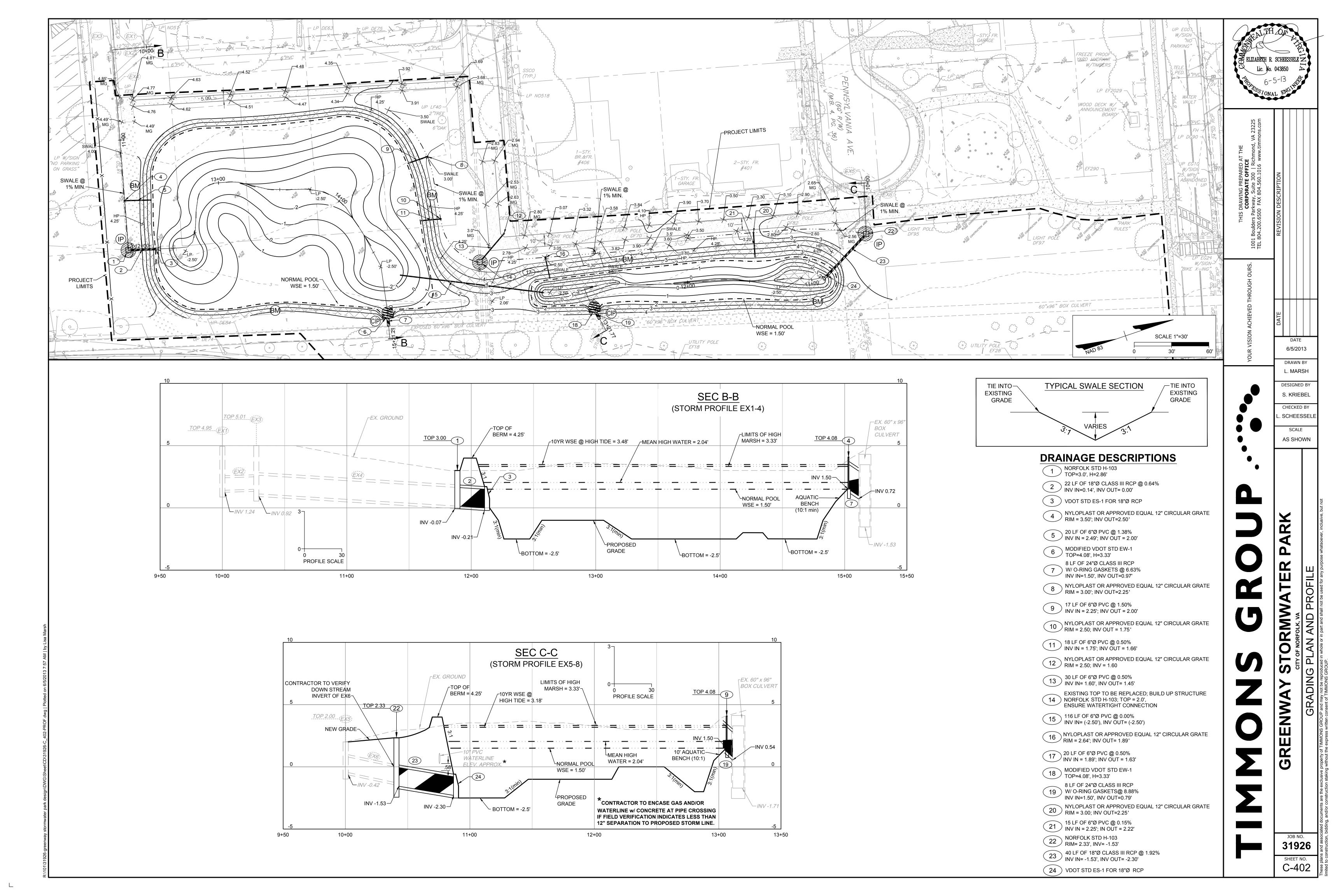
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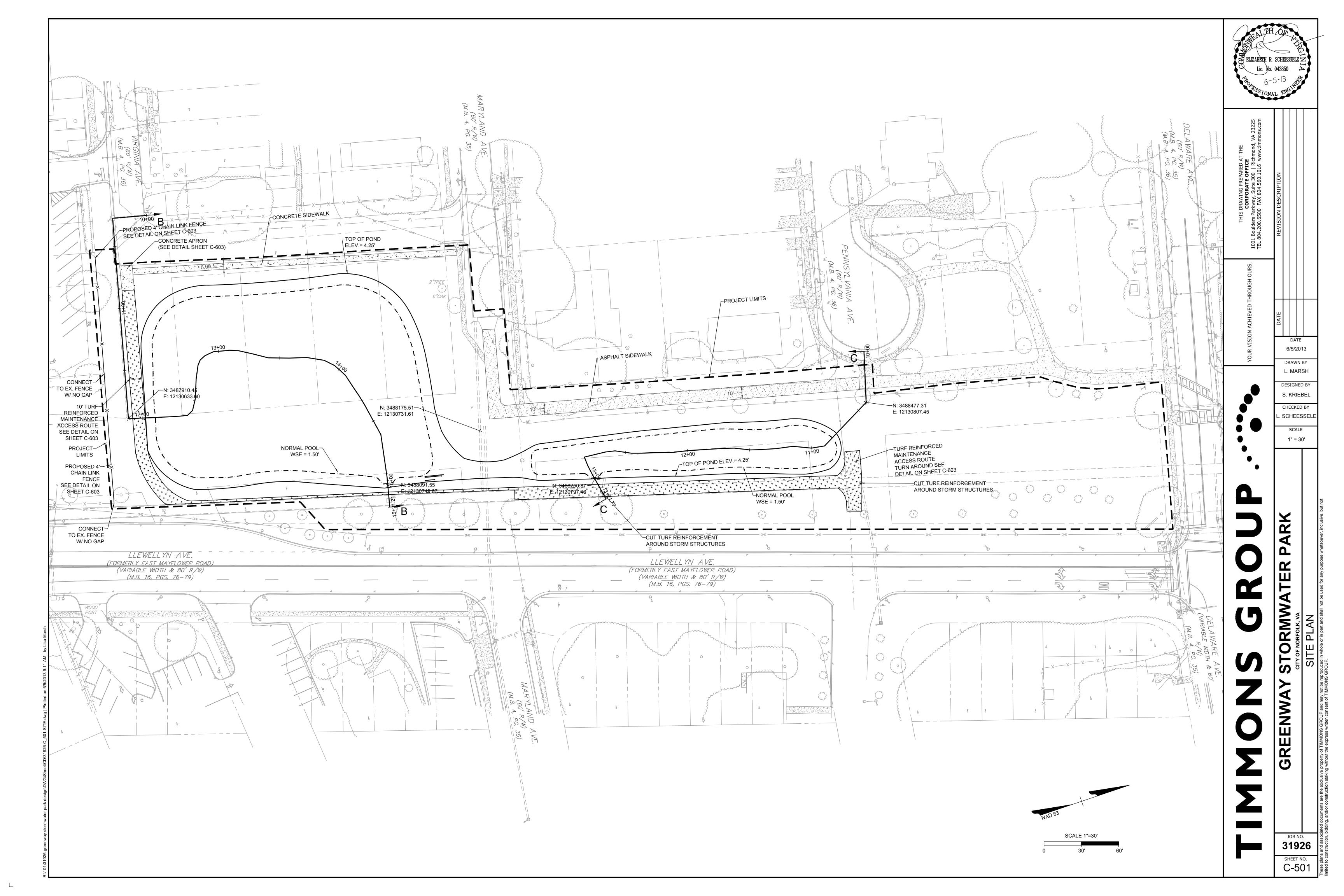












SITE LOCATION AND PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF AN ENHANCED DETENTION BASIN WITHIN THE EXISTING GREENWAY PARK LIMITS. THIS BASIN WILL CAPTURE AND TREAT THE SURROUNDING DRAINAGE AND DISCHARGE INTO AN EXISTING 60"x96" BOX CULVERT THAT OUTFALLS INTO THE EAST HAVEN BAY APPROXIMATELY 500 FEET DOWNSTREAM. THE PROJECT LIMITS ARE BOUND TO THE NORTH BY DELAWARE AVENUE. TO THE SOUTH BY 38TH STREET. AND TO THE EAST BY LLEWELLYN AVENUE. A GEOTECHNICAL REPORT HAS BEEN DEVELOPED IN THE LOCATION OF THE PROPOSED DETENTION POND. TOPOGRAPHIC SURVEY HAS BEEN OBTAINED FROM 38TH STREET TO THE BAY AND ON THE EAST AND WEST OF LLEWELLYN AVENUE.

EXISTING SITE CONDITIONS

THE EXISTING SITE CONSISTS OF A SMALL PARK AREA CALLED GREENWAY PARK. THE PARK IS SURROUNDED BY RESIDENTIAL HOMES AND APARTMENTS. THE ELEVATION OF THE POND LOCATION VARIES BETWEEN APPROXIMATELY 2.0 AND 4.0 FEET. ACCORDING TO THE GEOTECHNICAL REPORT, THE UNDERGROUND WATER TABLE IS AT ELEVATION 1.5 FEET. THIS IS APPROXIMATELY 1.5 TO 2.0 FEET BELOW THE GROUND SURFACE.

THE EXISTING DRAINAGE AREA TO THE DETENTION POND IS A TOTAL OF 19.07 ACRES WHICH CONSISTS OF 1.92 ACRES OF SURFACE RUNOFF AND 17.15 ACRES OF PIPE RUNOFF. THIS DRAINAGE AREA WAS DETERMINED USING THE CITY OF NORFOLK GIS DATA BASE SHOWING EXISTING 1 FOOT CONTOURS, EXISTING RESIDENTIAL LOT LINES AND EXISTING RIGHT-OF-WAY LINES.

OFF-SITE AREAS

THERE WILL BE NO DISTURBANCE IMPACTS TO ADJACENT PROPERTIES. ALL CONSTRUCTION ACTIVITY FOR THIS PROJECT WILL BE WITHIN THE GREENWAY PARK LIMITS, WHICH IS OWNED BY THE CITY OF NORFOLK . DISRUPTION OF UTILITY SERVICE TO THE NEIGHBORING RESIDENTIAL UNITS WILL BE AVOIDED AS MUCH AS POSSIBLE

DEMOLITION

SITE DEMOLITION WILL CONSIST OF THE REMOVAL OF VEGETATION AND EXISTING STORM SEWER WITHIN THE VICINITY OF THE PROPOSED DETENTION POND. EXISTING UTILITIES ARE TO REMAIN IN PLACE AND SERVICE DISRUPTION IS TO BE AVOIDED BY ALL MEANS POSSIBLE.

ACCORDING TO THE "WEB SOIL SURVEY" PROVIDED BY UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) HTTP://WEBSOILSURVEY.NRCS.USDA.GOV/APP/HOMEPAGE.HTM)

CONSTRUCTION SEQUENCE

BEFORE SITE DEMOLITION OR CLEARING AND GRADING CAN BEGIN, ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH). SEEDING. TREE PROTECTION, INLET PROTECTION, SILT FENCE, SAFETY FENCE AND A CONSTRUCTION ENTRANCE ARE THE PRIMARY E&S MEASURES THAT WILL BE UTILIZED DURING CONSTRUCTION.

IN GENERAL CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE. SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING AND WILL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION. TEMPORARY SEEDING OR OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING. AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY E&S CONTROLS WILL BE CLEANED AND REMOVED.

THE FOLLOWING SEQUENCE OF CONSTRUCTION IS PROPOSED FOR THIS DEVELOPMENT

- 1. OBTAIN ALL APPLICABLE PERMITS, CONTACT APPLICABLE UTILITY COMPANIES AND COORDINATE UTILITY RELOCATION/REMOVAL. 2. DO NOT INITIATE ANY LAND DISTURBING ACTIVITY UNTIL AUTHORIZED TO
- PROCEED BY OWNER. 3. COORDINATE MOBILIZATION AND JOB SITE ACCESS WITH OWNER'S REPRESENTATIVE AND CITY OF NORFOLK PUBLIC WORKS DEPARTMENT
- 2. THE CONTRACTOR SHALL CONTACT ENVIRONMENTAL STORM WATER AT 823-4000 (48 HOUR NOTICE) PRIOR TO ANY LAND DISTURBING ACTIVITY (INCLUDING DEMOLITION) SO THAT A PRECONSTRUCTION CONFERENCE
- CAN BE SCHEDULED. 3. INSTALL STABILIZED CONSTRUCTION ENTRANCE. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO EXISTING PAVEMENT AND CONCRETE DUE
- TO TRUCK TRAFFIC. 4. INSTALL SAFETY FENCE, SILT FENCE, TREE PROTECTION, AND INLET PROTECTION ON EXISTING STRUCTURES AS SHOWN ON SHEET C-301.
- 5. BEGIN DEMOLITION OF SITE AS SHOWN ON SHEET C-301. 6. INSTALL PIPES 1 AND 24 AS DETAILED ON SHEET C-401 AND C-402.
- 7. ROUGH GRADE THE DETENTION POND. DEWATERING FLOWS MUST BE
- FILTERED PRIOR TO DISCHARGE. 8. TEMPORARY SEED ALL DENUDED AREAS THAT WILL REMAIN DORMANT
- FOR 30 DAYS OR MORE, WITHIN 7 DAYS. 9. INSTALL REMAINING STORM SEWER AS DETAILED ON SHEETS C-401 AND
- C-402. REMOVE EXISTING STORM PIPES ONCE PROPOSED PIPES ARE INSTALLED AND FUNCTIONING PROPERLY. 10. FINE GRADE THE DETENTION POND AND PROMPTLY STABILIZE AREAS TO
- BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
- 11. PLACE TOPSOIL ON ALL LANDSCAPE AREAS. SEED AND MULCH ALL DENUDED AREAS.
- 12. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. DO NOT REMOVE EROSION CONTROL MEASURES UNTIL THE ENTIRE SITE HAS BEEN PERMANENTLY STABILIZED.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRICTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), 3RD EDITION. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

THE FOLLOWING MEASURES SHALL BE INSTALLED AND MAINTAINED AS SHOWN ON THE GREENWAY STORMWATER PARK EROSION AND SEDIMENT CONTROL PLAN SHEETS OF THE SITE PLAN SET:

SAFETY FENCE - 3.01:

A CHAIN LINK FENCE SHALL BE INSTALLED AROUND THE CONSTRUCTION AREA IN ORDER TO PREVENT ACCESS TO THE SITE.

INSTALLED AT POINTS OF INGRESS AND EGRESS ON THE CONSTRUCTION SITE.

CONSTRUCTION ENTRANCE - 3.02:

A DOUBLE SILT FENCE SHALL BE INSTALLED AROUND ANY CONSTRUCTION LAY DOWN AREA IN ORDER TO LIMIT SEDIMENT-LADEN RUNOFF FROM SHEET FLOW

A STABILIZED STONE PAD WITH A FILTER FABRIC UNDERLINER SHALL BE

OFF THE LAY DOWN AREA.

STORM DRAIN INLET PROTECTION - 3.07: ALL STORM DRAIN INLETS WITHIN THE PROJECT DISTURBED AREA SHALL BE PROTECTED DURING CONSTRUCTION. SEDIMENT-LADEN WATER SHALL BE

CULVERT INLET PROTECTION - 3.08

FILTERED BEFORE ENTERING THE STORM SEWER INLETS.

ALL CULVERTS WITHIN THE PROJECT DISTURBED AREA SHALL BE PROTECTED DURING CONSTRUCTION. CULVERT PROTECTION SHALL BE INSTALLED ON ALL EXISTING STORM CULVERTS WITHIN THE PROJECT AREA THAT ARE TO REMAIN DURING CONSTRUCTED. SEDIMENT-LADEN WATER SHALL BE FILTERED BEFORE ENTERING THE STORM SEWER CULVERTS.

TREE PROTECTION - 3.38:

A FENCE BARRIER IS TO BE PLACED AROUND THE TREES AND VEGETATED AREAS WHICH WILL NOT BE DISTURBED TO PROTECT THE TRESS AND OTHER VEGETATION FROM CONSTRUCTION EQUIPMENT AND SOIL COMPACTION.

TEMPORARY SEEDING - 3.31

ALL DENUDED AREAS THAT WILL REMAIN DORMANT FOR A PERIOD OF TIME GREATER THAN 30 DAYS SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF VEGETATION WILL BE DEPENDENT ON THE TIME OF YEAR IT IS APPLIED.

PERMANENT SEEDING - 3.32:

ALL DENUDED AREAS THAT ARE TO REMAIN DORMANT FOR A PERIOD OF TIME GREATER THAN 1 YEAR OR MORE ARE TO BE PERMANENT SEEDED. ALL AREAS THAT HAVE REACHED FINAL GRADE ARE TO BE PERMANENTLY SEEDED AS SOON AS FINAL GRADE IS REACHED.

MAINTENANCE

IN GENERAL, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED AFTER EACH RAINFALL OR WEEKLY, WHICHEVER IS MOST FREQUENT, AND SHOULD BE CLEANED AND REPAIRED ACCORDING TO THE FOLLOWING SCHEDULE:

- 1. E&S CONTROL WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION AND BUILDUP OR CLOGGING WITH SEDIMENT. CORRECTIVE ACTION WILL BE TAKEN IMMEDIATELY
- 2. ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS
- 3. ALL TEMPORARY E & S MEASURES SHALL BE DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ESTABLISHED.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT STABILIZATION IMMEDIATELY FOLLOWING FINISH GRADING. ONCE CONSTRUCTION HAS BEEN COMPLETED, FINAL GRADING WILL TAKE PLACE.

SILT FENCE NOTES

- SILT FENCE AND FILTER FABRIC MUST BE ENTRENCHED.
- 2. POST FOR SILT FENCES SHALL BE EITHER 2.5 X 2 INCH DIAMETER WOOD OR 1.25 POUNDS PER LINEAR FOOT STEEL WITH A MINIMUM LENGTH OF 5 FEET.
- 3. POST SHALL BE SPACED A MAXIMUM OF 6 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MIN. OF 12 INCHES) WHEN EXTRA STRENGTH FABRIC IS USED.
- 4. STAPLE OR WIRE THE FILTER FABRIC DIRECTLY TO THE POST.
- 5. SEDIMENT MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
- 6. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
- 7. SILT FENCE SHALL BE REMOVED UPON COMPLETION OF THE PROJECT

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ES-1: UNLESS OTHERWISE INDICATED, CONSTRUCT AND MAINTAIN ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.
- ES-2: DPU INSPECTOR WILL MAKE A CONTINUING REVIEW AND EVALUATION OF THE METHODS AND EFFECTIVENESS OF THE E.C. PLAN.
- ES-3: PLACE ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO OR AS THE FIRST STEP IN CLEARING, GRADING, OR LAND DISTURBANCE.
- ES-4: MAINTAIN A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN ON THE SITE AT ALL TIMES.
- ES-5: PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFFSITE BORROW OR WASTE AREA), SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE ARCHITECT/ENGINEER FOR REVIEW AND ACCEPTANCE.
- ES-6: PROVIDE ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE DPU INSPECTOR.
- ES-7: ALL DISTURBED AREAS SHALL DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND-DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT.
- ES-8: DURING DEWATERING OPERATIONS, PUMP WATER INTO AN APPROVED FILTERING DEVICE.
- ES-9: INSPECT ALL EROSION CONTROL MEASURES DAILY AND AFTER EACH RUNOFF- PRODUCING RAINFALL EVENT. MAKE ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES IMMEDIATELY.

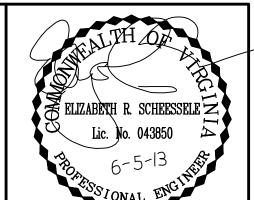
EROSION AND SEDIMENT CONTROL NOTES

- 1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (3RD EDITION, 1992) AND THE CITY OF NORFOLK EROSION AND SEDIMENT CONTROL ORDINANCE.
- 2. THE CONTRACTOR SHALL CONTACT ENVIRONMENTAL STORM WATER AT 823-4000 (48 HOUR NOTICE) PRIOR TO ANY LAND DISTURBING ACTIVITY (INCLUDING DEMOLITION) SO THAT A PRECONSTRUCTION CONFERENCE CAN BE SCHEDULED.
- 3. THE CONTRACTOR SHALL APPLY PERMANENT OR TEMPORARY SOIL STABILIZATION TO ALL DENUDED OR DISTURBED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. SOIL STABILIZATION MUST ALSO BE APPLIED TO DENUDED OR DISTURBED AREAS WHICH WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. SOIL STABILIZATION MEASURES INCLUDE VEGETATIVE ESTABLISHMENT, MULCHING AND THE EARLY APPLICATION OF GRAVEL BASE MATERIAL ON AREAS TO BE PAVED.
- 4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION.
- 5. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURE PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND CLEANUP OF SEDIMENTATION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IMMEDIATELY.
- 6. THE CONTRACTOR SHALL LIMIT SITE ACCESS BY CONSTRUCTION VEHICLES TO ENTRANCES PROTECTED BY A STONE CONSTRUCTION ENTRANCE (VESCH STD. & SPEC 3.02) OR AN APPROVED COMPARABLE CONTROL MEASURE. SEDIMENT SHALL BE REMOVED FROM PAVED AREAS ON A DAILY BASIS.
- 7. STOCKPILES OF SOIL AND OTHER ERODIBLE MATERIALS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION FOR STOCKPILES ON SITE AS WELL AS FOR MATERIALS TRANSPORTED FROM THE PROJECT SITE.
- 8. THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST INCLUDING (BUT NOT LIMITED TO) USE OF WATER, MULCH, OR CHEMICAL DUST ADHESIVES AND CONTROL OF CONSTRUCTION SITE TRAFFIC.
- 9. EFFLUENT FROM DE-WATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT ADJACENT PROPERTIES, WETLANDS, WATERWAYS OR THE STORM DRAINAGE SYSTEM.
- 10. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.
- 11. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. AFTER STABILIZATION IS COMPLETE. ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS, TRAPPED SEDIMENT SHALL BE SPREAD AND SEEDED.
- 12. TOPSOIL, SEED, AND FERTILIZE ALL AREAS WITHIN THE PROJECT LIMITS NOT OCCUPIED BY STRUCTURE, PAVEMENT, SIDEWALKS, ETC., TEMPORARY SEEDING OR STABILIZATION WILL BE REQUIRED WITHIN 7 DAYS OF CONSTRUCTION. SEE LANDSCAPE PLAN.
- 13. FOR ALL SITES 1 ACRE OR GREATER, OR GREATER THAN 2500 SQUARE FEET IN THE CBPA, CONTACT THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION AT (804) 786-1712 TO OBTAIN A VSMP CONSTRUCTION PERMIT.
- 14. THE CONTRACTOR SHALL CONTACT ENVIRONMENTAL STORM WATER AT 823-4000 (48 HOUR NOTICE) FOR INSPECTION OF ALL STORM WATER INFRASTRUCTURE CONSTRUCTED IN THE RIGHT-OF-WAY.
- 15. THE CONTRACTOR SHALL CONTACT ENVIRONMENTAL STORM WATER AT 823-4000 (48 HOUR NOTICE) FOR PRECONSTRUCTION CONFERENCE AND INSPECTION REQUIREMENT FOR THE SWM BASIN.
- 16. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE SITE AT ALL REASONABLE TIMES.
- 17. THE CONTRACTOR SHALL ADHERE TO MS-16, 4VAC 50-30-40 OF THE EROSION AND SEDIMENT CONTROL REGULATIONS FOR EROSION AND SEDIMENT CONTROL MEASURES FOR UTILITY TRENCH EXCAVATION.
- 18. THE VSMP PERMIT SHALL BE SUBMITTED BY US UNDER A SEPARATE PACKAGE.

MINIMUM STANDARDS

- MS-1: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- MS-2: DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- MS-3: A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- MS-4: SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
- MS-5: STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- MS-6: SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
 - A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
- B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL. AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.
- MS-7: CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
- MS-8: CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
- MS-9: WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- MS-10: ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- MS-11: BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
- MS-12: WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT. CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
- MS-13: WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD. A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
- MS-14: ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
- MS-15:THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
- MS-16: UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
 - A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
- C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
- D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE
- F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH
- MS-17: WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE. THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- MS-18: ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- MS-19: PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:
 - A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL. PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM. DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.

- B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
- 1. THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
- 1.a. NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
- 1.b. ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
- 1.c. PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
- C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
- 1. IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR FREQUENCY STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR FREQUENCY STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR
- 2. IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR FREQUENCY STORM IS CONTAINED WITHIN THE APPURTENANCES; OR
- 3. DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL: OR
- 4. PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE PLAN APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION.
- D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
- E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT.
- F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
- G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
- H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
- I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION
- J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
- K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL. CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.



6/5/2013

L. MARSH **DESIGNED BY** S. KRIEBEL

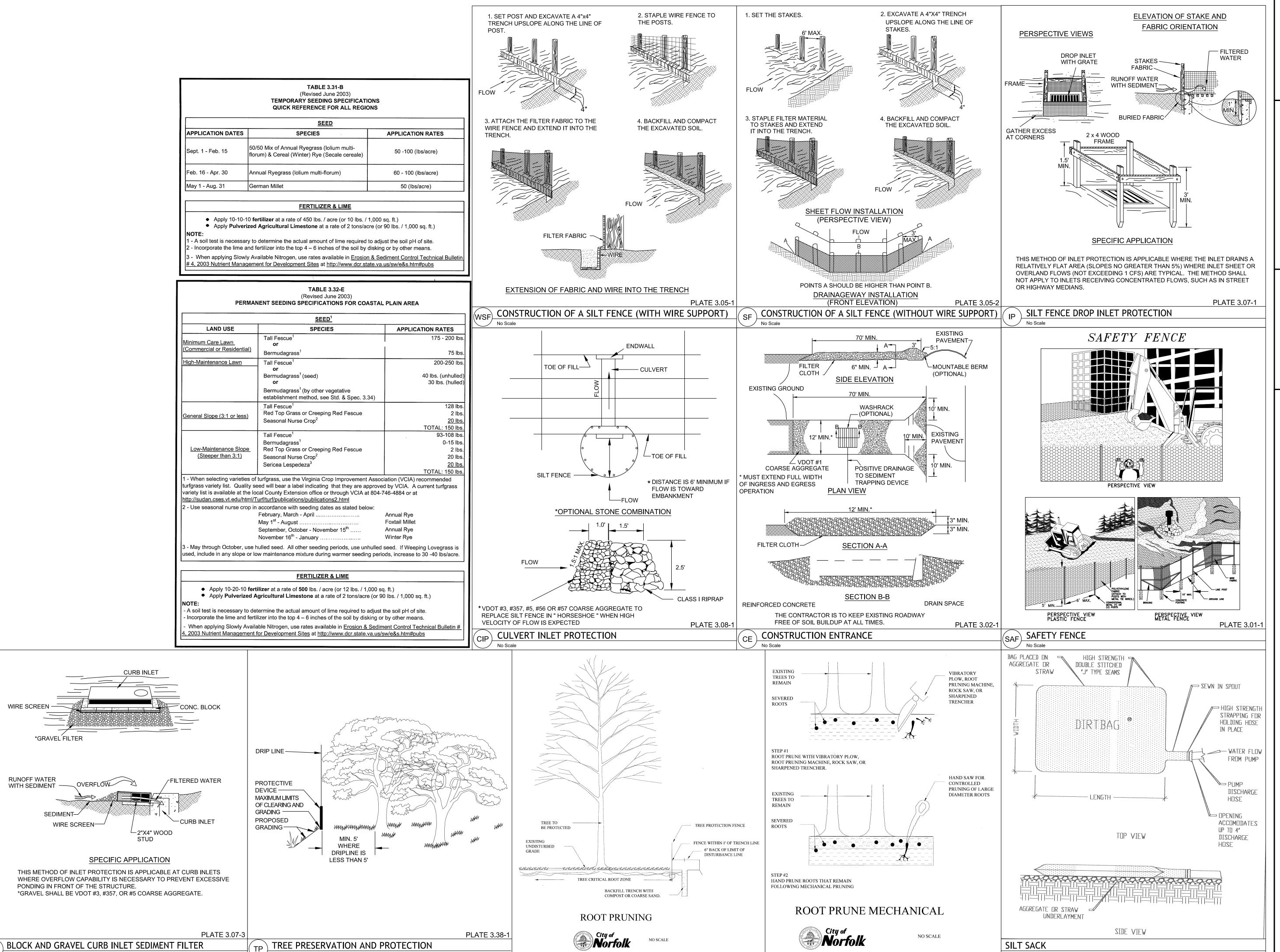
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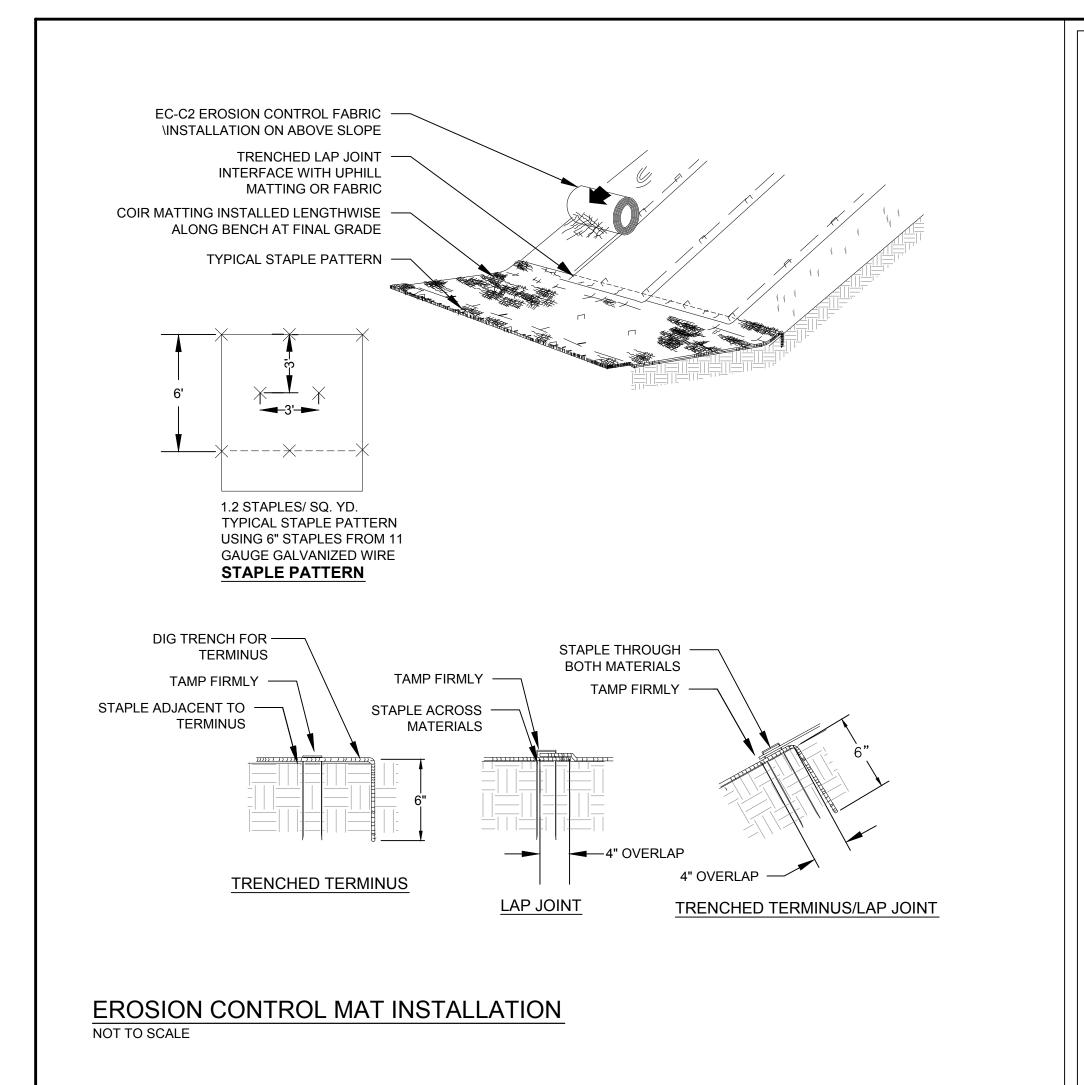
6/5/2013 DRAWN BY L. MARSH **DESIGNED BY** S. KRIEBEL

CHECKED BY SCHEESSELI SCALE

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31926 SHEET NO. C-602

SILT SACK





443 Bricker Road Bernville, PA 19506 1-800-582-4005 610-488-8496 (office) 610-488-8494 (fax) www.erosionblankets.com

Material and Performance Specification Sheet

ECC-2 Double Net Coconut Rolled Erosion Control Product

Description: The ECC-2 is made with uniformly distributed 100% coconut fiber and two polypropylene nets securely sewn together with UV stabilized thread. The tightly compressed blankets are placed inside vented bags and include a product label, code and installation guide. The blankets are palletized for easy transportation.

> The ECC-2 has functional longevity of approximately 36 months, but will vary depending on soil and climatic conditions and is suitable for slopes 1:1. The ECC-2 meets Type 4 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.

Materials:	Netting - Top and Bottom	Matrix	Thread
	Heavyweight UV Stabilized Polypropylene .75" x .75" Opening	100% Coconut Fiber 0.55 lbs/sq yd	UV Stabilized 1.50" stitch spacing

Roll Sizes:	Standa	rds
Width:	7.5 ft (2.3 m)	7.5 ft (2.3 m)
Length:	96.0 ft (29.3 m)	120.0 ft (36.6 m)
Weight <u>+</u> 10%:	48.0 lbs(20.4 kg)	60.0 lbs (27.2 kg
Area:	80 yd ² (66.9 m ²)	100 yd² (83.6 m²
#/Pallet:	20	16 ya (65.6 m

Property	Test Method	Typical 9.45 oz/yd²	
Mass/Unit Area	ASTM D6475		
Thickness	ASTM D5199	.23 in	
Tensile Strength-MD	ASTM D5035	270 lb/ft	
Elongation-MD	ASTM D5035	38 %	
Tensile Strength-TD	ASTM D5035	170 lb/ft	
Elongation-TD	ASTM D5035	30 %	
Light Penetration	ECTC Guidelines	14 %	
Water Absorption	ASTM D1117	233 %	

Parameters	Results	
50mm (2in) / hr-30 min	SLR**=8.00	
100mm (4in) / hr-30 min	SLR**=11.71	
150mm (6in) / hr-30 min	SLR**=17.41	
Shear at .50 in soil loss	2.99 lb/ft	
ECTC Method 4 Top soil; Fescue;		
21 day incubation	improvement	
	50mm (2in) / hr-30 min 100mm (4in) / hr-30 min 150mm (6in) / hr-30 min Shear at .50 in soil loss	

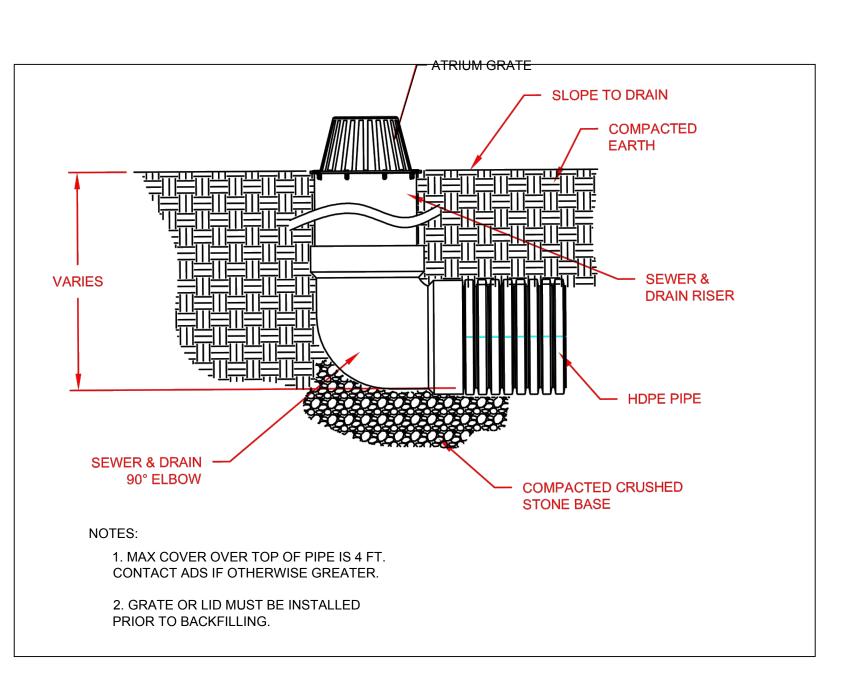
PINELANDS **

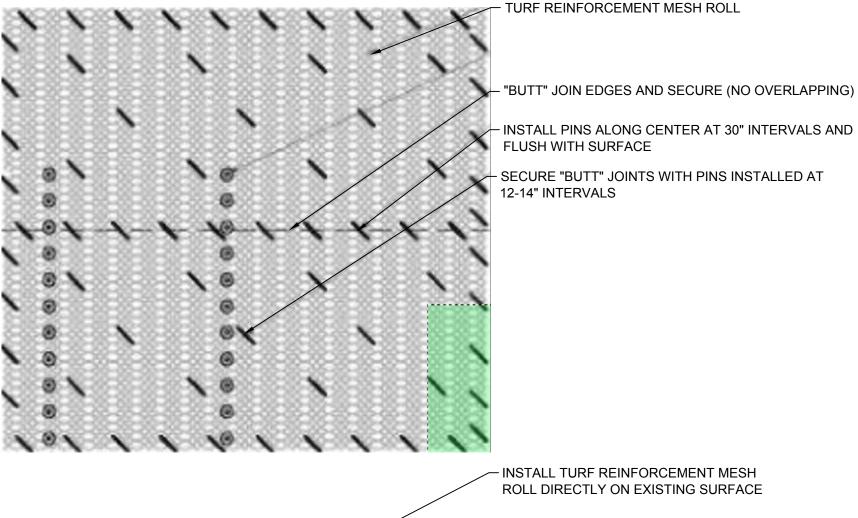
Property	Value
Manning's N	.015
RUSLE C-Factor	.09
Maximum Permissible Sheer Stress	3.2 psf (154 Pa)
Maximum Flow Velocity	7.0 ft/sec (2.13 m/sec)

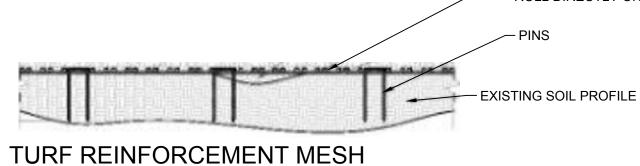
Distributed by: Pinelands Nursery & Supply 323 Island Road Columbus, NJ 08022 Telephone: 609-291-9486 Nursery & Supply Fax: 609-298-8939 www.pinelandsnursery.com

based on regression analysis).

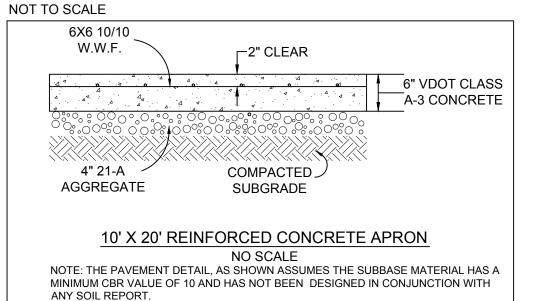
Revised 4/1/07 Supersedes all previous versions

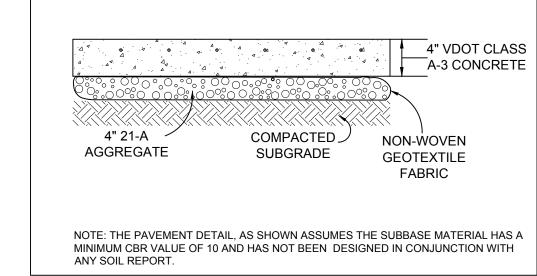




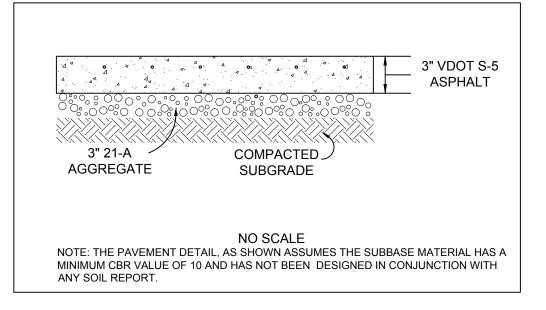


SEWER AND DRAIN ELBOW/TEE W/CORR. PIPE AND ATRIUM GR.

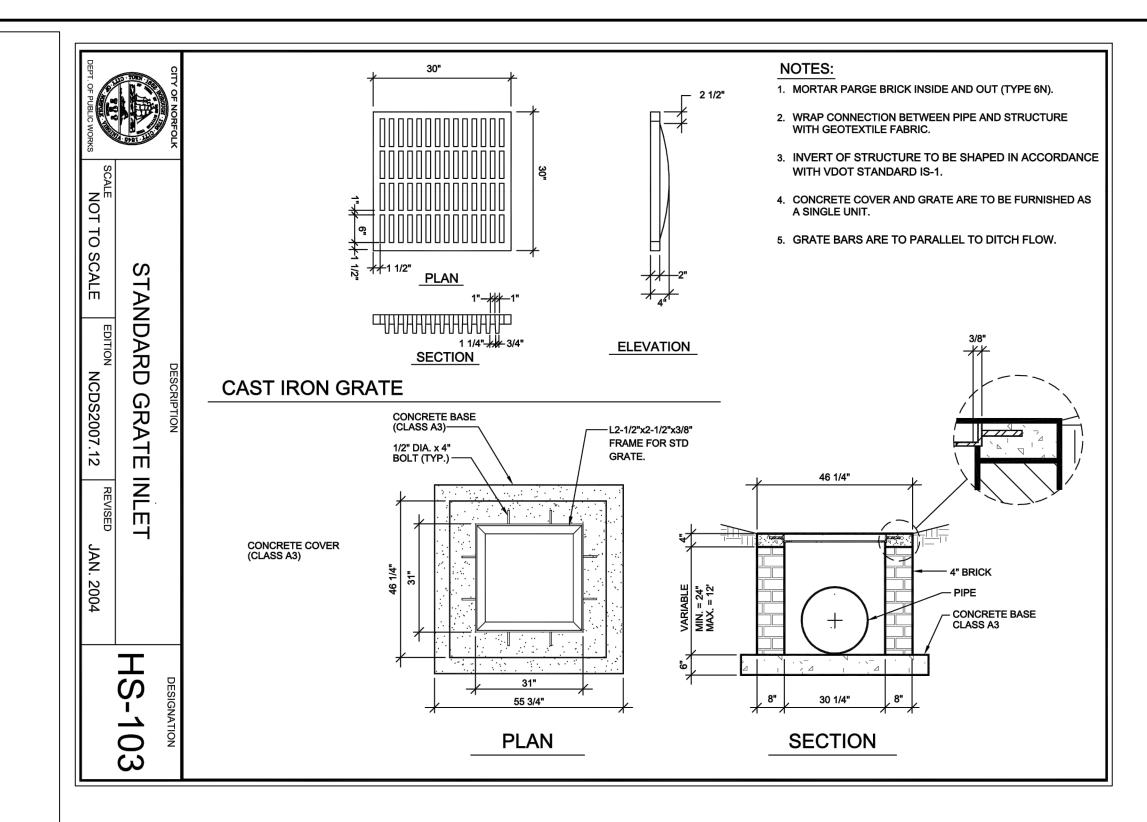


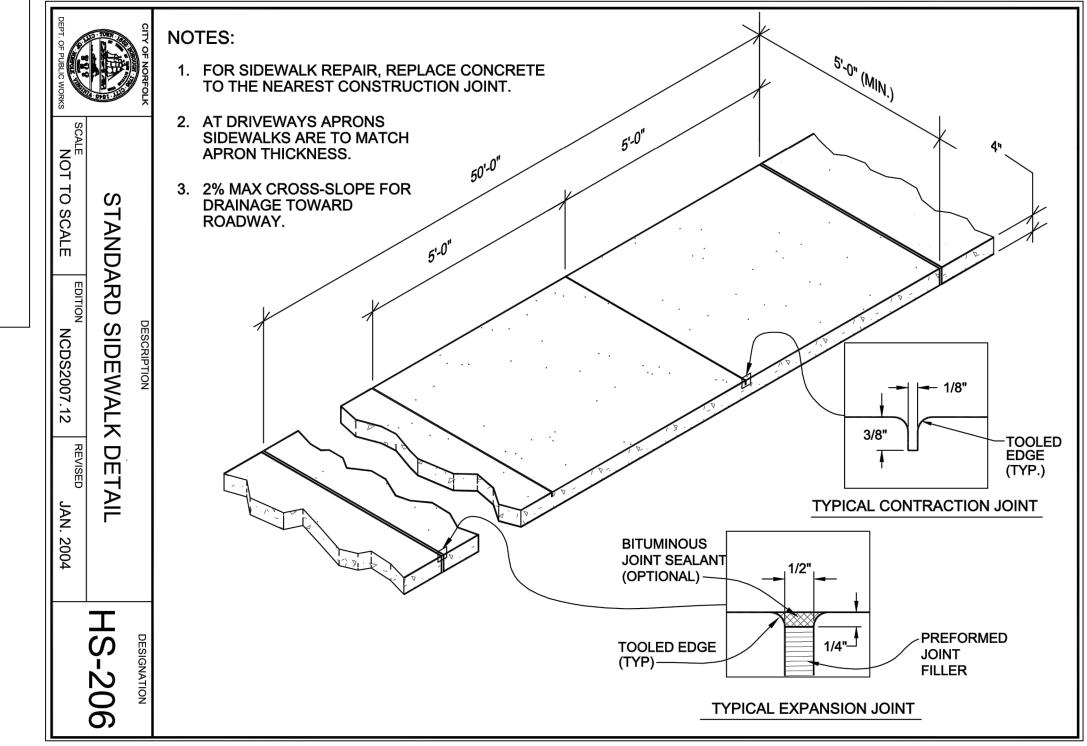


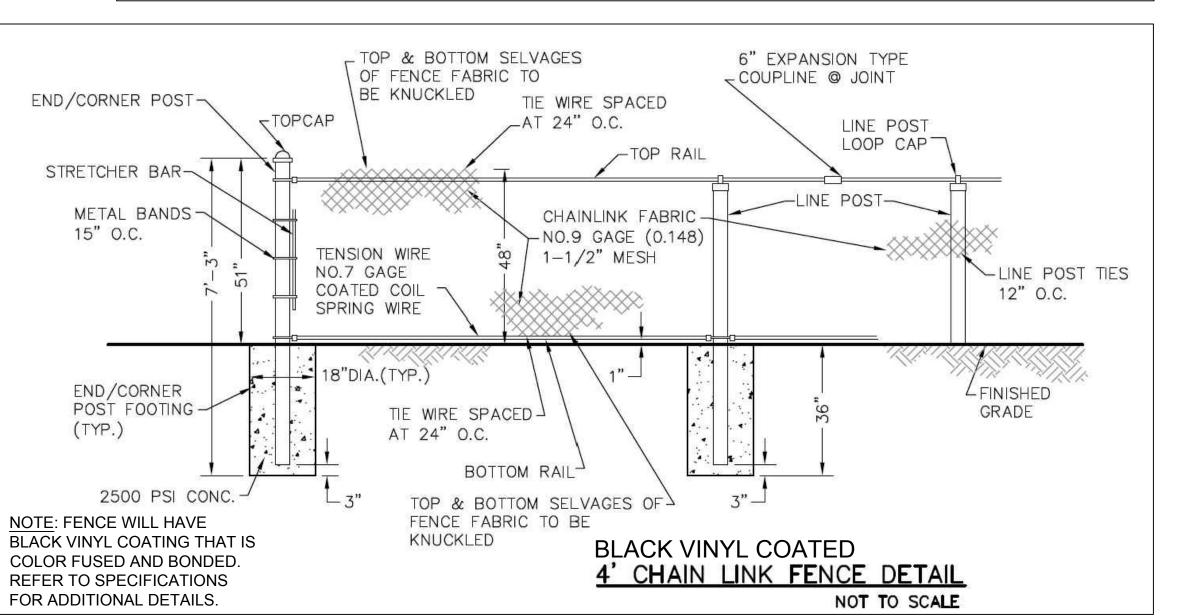
NOT TO SCALE



ASPHALT CONCRETE SIDEWALK NOT TO SCALE







6/5/2013

DRAWN BY L. MARSH **DESIGNED BY** S. KRIEBEL CHECKED BY

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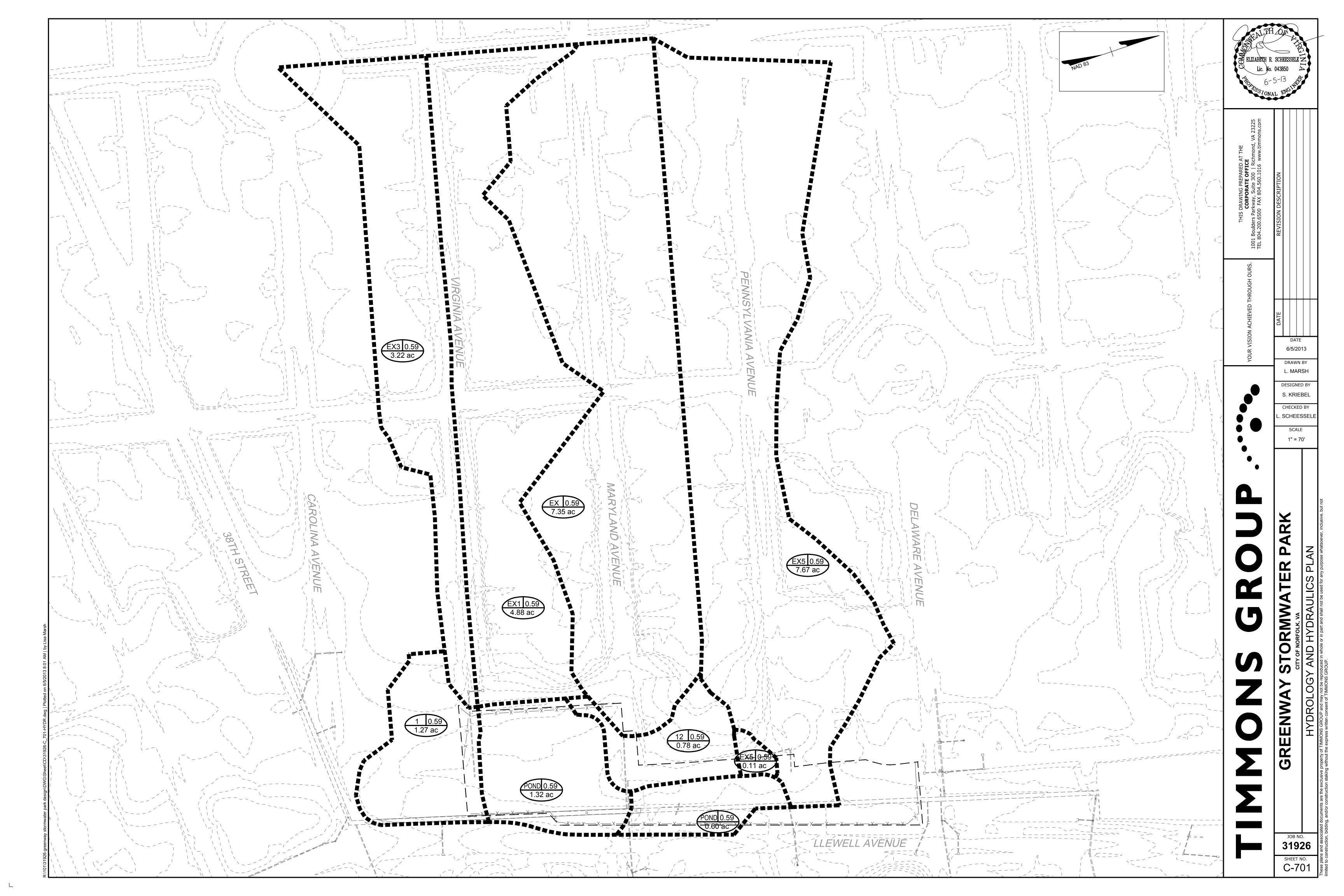
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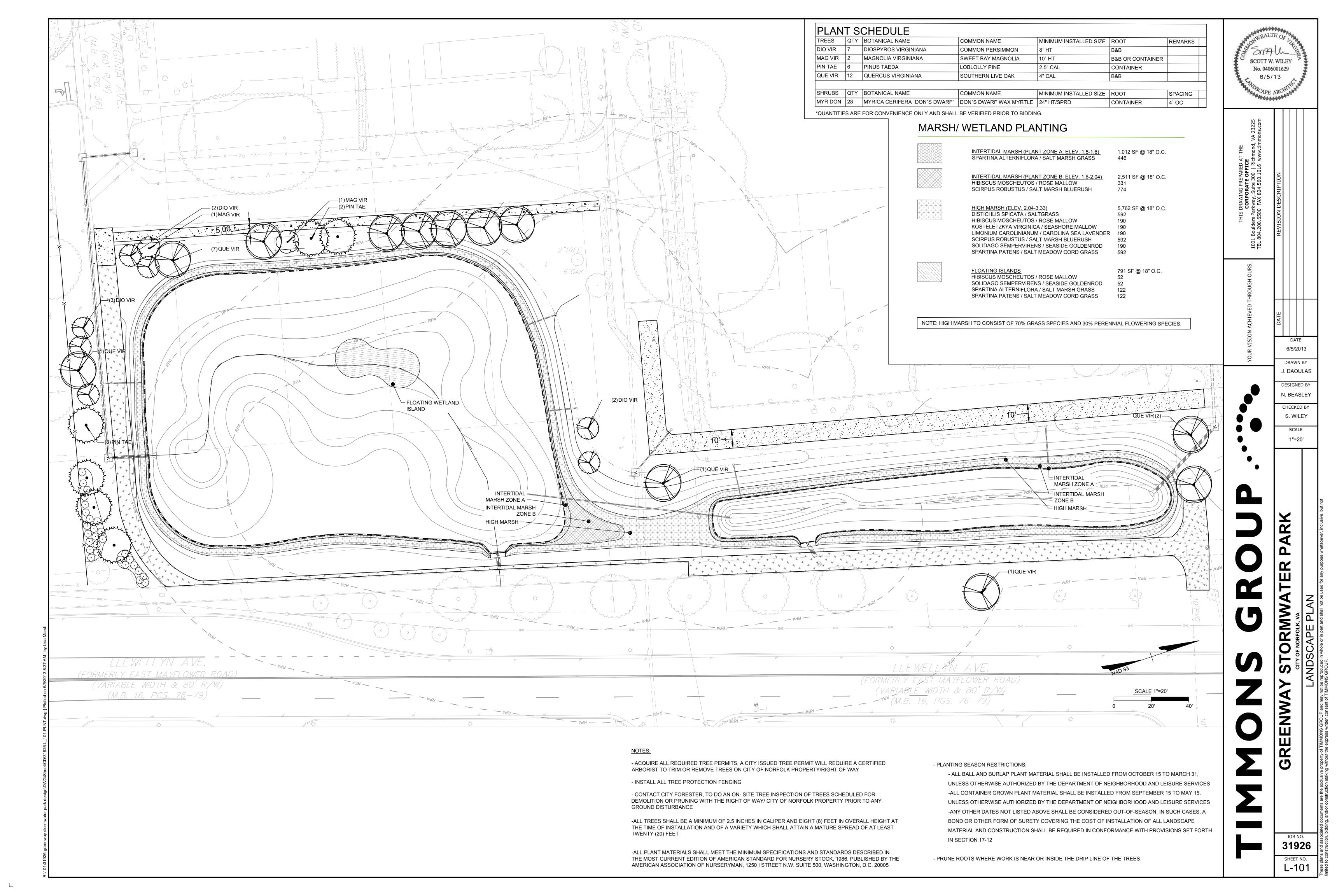
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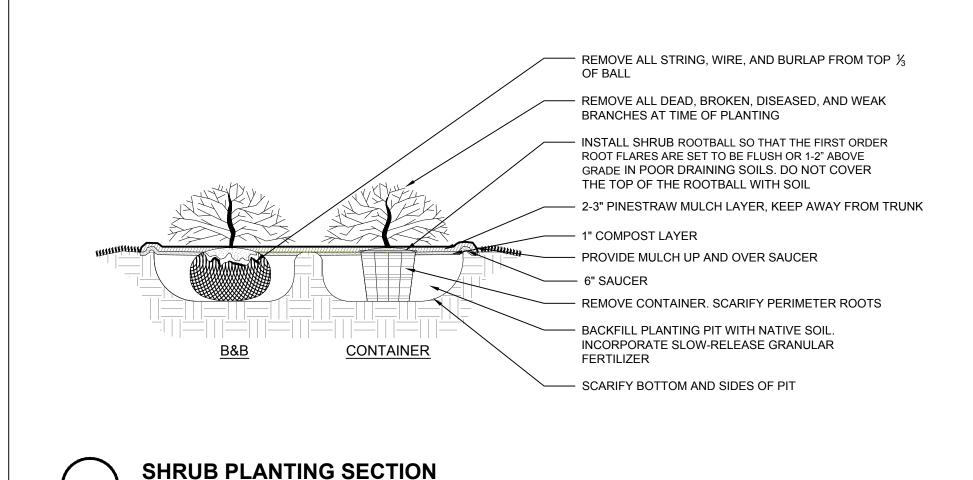
10' X 20' REINFORCED CONCRETE APRON NOT TO SCALE

NOT TO SCALE

CONCRETE SIDEWALK DETAIL



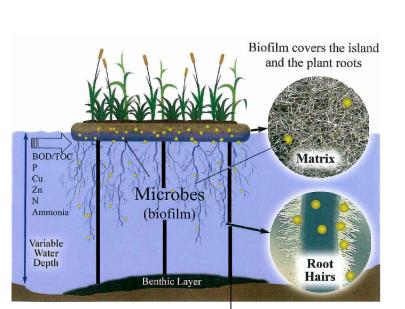






MANUFACTURER: (OR EQUAL) **BIOHAVEN** PO BOX 252 SHEPHERD, MT 59079 1-800-450-1088





- ANCHORING SYSTEM FOR ISLAND: ANCHOR ISLAND WITH A $\frac{3}{16}$ " 316 GRADE SS CABLE THAT IS SWAGED TOGETHER TO FORM A LOOP. USE ALUMINUM SWAGING SLEEVES.



FLOATING ISLAND

NOT TO SCALE

GENERAL NOTES

PRE-CONSTRUCTION

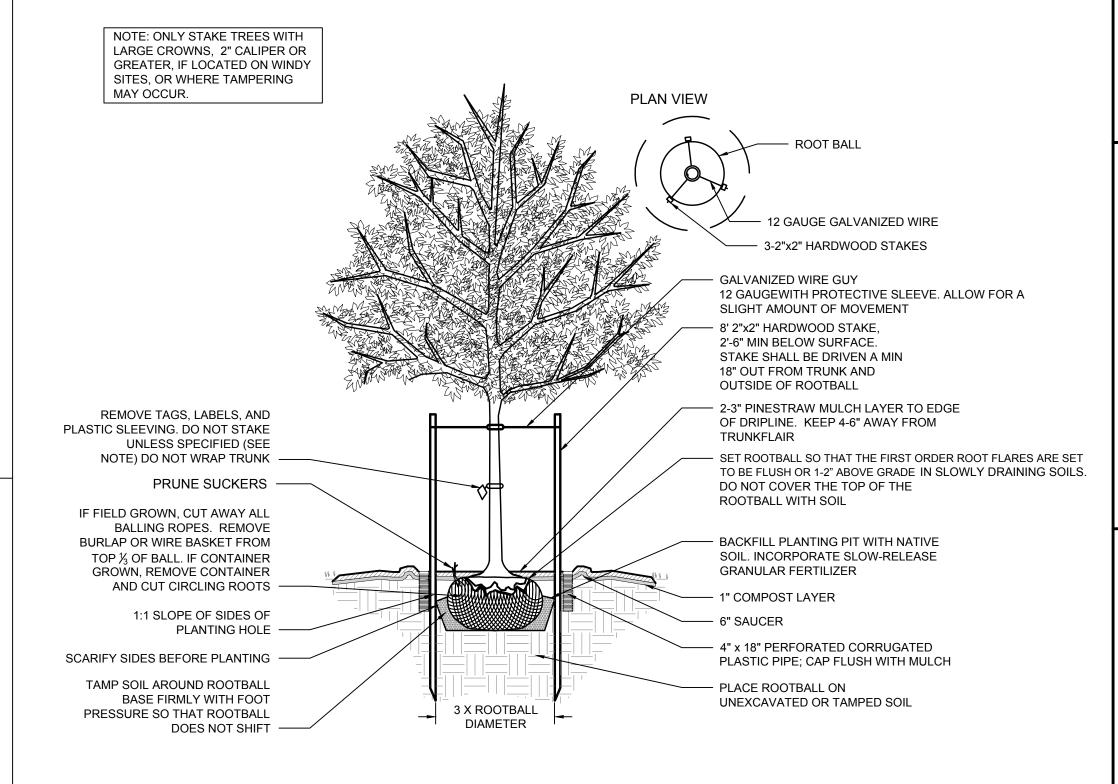
- CONTRACTOR IS RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1.800.552.7001 FOR LOCATION OF ALL UTILITY LINES.TREES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM SEWER/WATER CONNECTIONS. NOTIFY LANDSCAPE ARCHITECT OF CONFLICTS.
- VERIFY ALL PLANT MATERIAL QUANTITIES ON THE PLAN PRIOR TO BIDDING, PLANT LIST TOTALS ARE FOR CONVENIENCE ONLY
- AND SHALL BE VERIFIED PRIOR TO BIDDING.
- PROVIDE PLANT MATERIALS OF QUANTITY, SIZE, GENUS, SPECIES, AND VARIETY INDICATED ON PLANS. ALL PLANT MATERIALS AND INSTALLATION SHALL COMPLY WITH RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK". IF SPECIFIED PLANT MATERIAL IS NOT OBTAINABLE, SUBMIT PROOF OF NON AVAILABILITY TO THE ARCHITECTS, TOGETHER WITH PROPOSAL FOR USE OF EQUIVALENT MATERIAL.
- PROVIDE AND INSTALL ALL PLANTS AS IN ACCORDANCE WITH DETAILS AND CONTRACT SPECIFICATIONS.

CONSTRUCTION/INSTALLATION

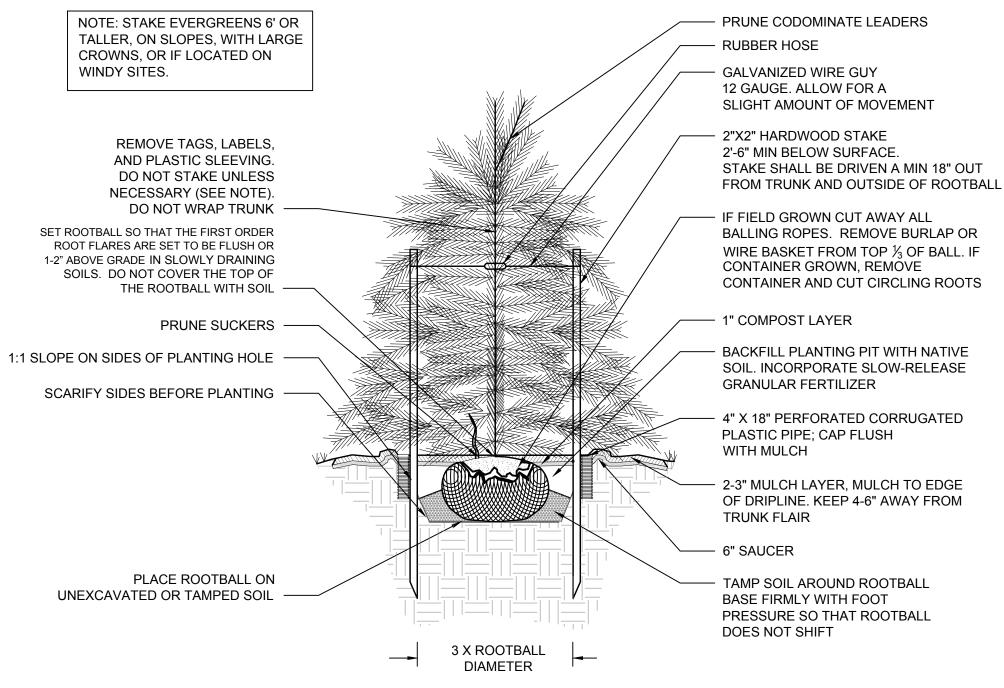
- LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS AND MATERIALS THAT ARE IN AN UNHEALTHY OR UNSIGHTLY CONDITION, AS WELL AS PLANTS AND MATERIALS THAT DO NOT CONFORM TO ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK".
- LABEL AT LEAST ONE TREE AND ONE SHRUB OF EACH VARIETY AND CALIPER WITH A SECURELY ATTACHED, WATERPROOF TAG BEARING THE DESIGNATION OF BOTANICAL AND COMMON NAME.
- INSTALL LANDSCAPE PLANTINGS AT ENTRANCES/EXITS AND PARKING AREAS ACCORDING TO PLANS SO THAT MATERIALS WILL NOT INTERFERE WITH SIGHT DISTANCES.
- CONTRACTOR IS RESPONSIBLE FOR WATERING ALL PLANT MATERIAL DURING INSTALLATION AND UNTIL FINAL INSPECTION AND ACCEPTANCE BY OWNER. CONTRACTOR SHALL NOTIFY OWNER OF CONDITIONS WHICH AFFECTS THE GUARANTEE.

INSPECTIONS/GUARANTEE

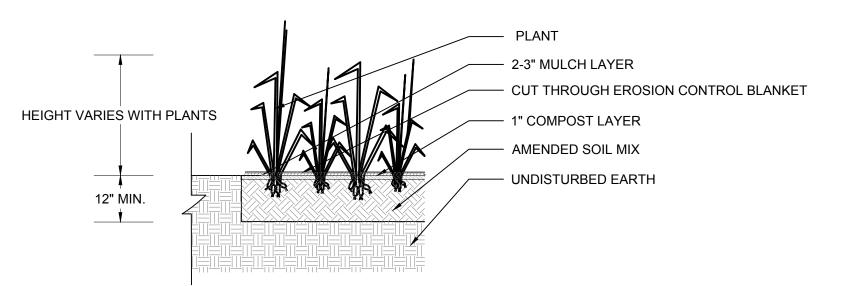
- UPON COMPLETION OF LANDSCAPE INSTALLATION, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR WHO WILL VERIFY COMPLETENESS, INCLUDING THE REPLACEMENT OF ALL DEAD PLANT MATERIAL. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A FINAL INSPECTION BY THE LANDSCAPE ARCHITECT.
- ALL EXTERIOR PLANT MATERIALS SHALL BE GUARANTEED FOR ONE FULL YEAR AFTER DATE OF FINAL INSPECTION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH. DEFECTS RESULTING FROM NEGLECT BY THE OWNER, ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS WHICH ARE BEYOND TH CONTRACTORS CONTROL ARE NOT THE RESPONSIBILITY OF THE CONTRACTOR.
- PLANT MATERIAL QUANTITIES AND SIZES WILL BE INSPECTED FOR COMPLIANCE WITH APPROVED PLANS BY A SITE PLAN REVIEW AGENT OF THE PLANNING DEPARTMENT PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY.
- REMOVE ALL GUY WIRES AND STAKES 12 MONTHS AFTER INSTALLATION.



DECIDUOUS TREE - STAKING SPECIFIED



EVERGREEN TREE- STAKING SPECIFIED NOT TO SCALE



MARSH/ WETLAND PLANTING DETAIL **NOT TO SCALE**

SCOTT W. WILEY No. 0406001629 6/5/13

DATE 6/5/2013

J. DAOULAS

DESIGNED BY N. BEASLEY CHECKED BY

S. WILEY

SCALE

31926

SHEET NO.